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ABSTRACT

The 1977-78 evaluation report of an interstate bilingual early education program for migrant children from age 3 through third grade which operates two permanent sites in Washington and one site in Texas, presents the program's progress in each of five components: instruction, staff development, parent and community involvement, materials development, and management. The report discusses the Texas site at La Grulla which operates a mobile component in which the teachers and administrative and training staff relocate to northern work sites, providing continuing services to children who move from Texas in the migrant stream. The goal, need, teaching process or involvement approach, and results for each component are given, along with a summary of findings. The preface is a paper presented at the February 1979 Southwest Educational Research Association meeting, in which the successful findings of this evaluation are shown to be sharply at variance with those in the American Institute for Research report on the impact of Title VII bilingual programs. Appendices include information on testing procedures and data collection, statistical data on the analysis of test scores in the instructional component, and technical report on the Mini Head Start Test of Cultural Concepts. (NEC)

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INDIVIDUALIZED BILINGUAL INSTRUCTION*

*PREVIOUS TITLE: TRAINING MIGRANT PARAPROFESSIONALS
IN BILINGUAL MINI HEAD START

FINAL EVALUATION

1977-78 Program Year

No. 13 in Series

Prepared by Beverly McConnell, Evaluator

Evaluation Office, SW 615 Cityview, Pullman, WA 99163

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A NATIONALLY VALIDATED BILINGUAL PROGRAM

A DEMONSTRATOR/DEVELOPER PROGRAM IN THE NATIONAL DIFFUSION NETWORK

GRANTEE:	ADMINISTRATIVE OFFICES:	
	Washington	Texas
Sunnyside School Dist. 201	Louise Gustafson	Rafael Guerra
R. A. Pistorese,	Project Manager	Education Director
Superintendent	P. O. Box 2367	P. O. Box 88
1110 S. 6th Street	Pasco, WA 99302	Grulla, TX 78548
Sunnyside, WA 98944	509-547-8442	512-487-3414

Funded by the U. S. Office of Education
Division of Bilingual Education

RC013112

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PREFACE

The findings of program effectiveness reported in this evaluation are sharply at variance with those in the recent AIR report on the impact of Title VII bilingual programs. For that reason, this paper, which was presented to the Southwest Educational Research Association meetings in Houston, February 1979, is included as a preface to the annual evaluation report.

DOES BILINGUAL EDUCATION WORK?

Those "present at the creation" when the bilingual education program was established by Congress in 1968 would probably have responded: "We don't know, but it is certainly worth a try." The "negative case" for bilingual education was demonstrated in the statistics that showed from 50% to 100% of language minorities dropped out of school prior to the 12th grade in a school system using only English as the medium of instruction.

Jose Cardenas, an early supporter of bilingual programs, described bilingual education as an "untested alternative," noting:

> Perhaps Hispanic minorities are so overwhelmingly in favor of bilingual education regardless of lack of evidence of its success because the experiences with past programs have been so negative . . . . If . . . the drop-out rate of Mexican American children in a South Texas school system is 90 percent, the parents cannot be blamed for strongly recommending an untested alternative.[1]

The 1970's, however, have become the "age of accountability" in education, and pressure has mounted on both federal officials and local programs to "come up with the answers" on the value of bilingual education.

Two types of efforts have been mounted by the U. S. Office of Education in this search for answers. One has been directed toward individual programs. Evaluation data from such programs have been screened by the Joint Dissemination Review Panel (JDRP) of USOE which attempts to determine that the results are valid and reliable, as well as educationally significant. Such programs are "validated" and special attention given to the data they have produced. Individualized Bilingual Instruction (IBI), the program reported in this document, is one bilingual program validated by JDRP.[2]

The other type of evaluative effort has been directed toward classes of programs. These are nationwide "impact studies" examining a sampling of programs from a common funding source to determine if, collectively, they are more effective than diverse "other" educational approaches in meeting the needs of the target population. For bilingual education the national "impact study" was completed by American Institute for Research (AIR) with its final report issued in 1978.

The answer to the question: "Does Bilingual Education Work?" that emerges from the IBI data, and from the AIR Impact Study, is in sharp contrast as summarized below:

CONCLUSIONS FROM AIR AND FROM IBI DATA ON EFFECTIVENESS OF BILINGUAL EDUCATION

AIR	IBI
ENGLISH LANGUAGE ARTS	ENGLISH LANGUAGE ARTS
"In general, across grades, when total Title VII and non-Title VII comparisons were made, the Title VII students were performing in English worse than the non-Title VII students."[3]	On a vocabulary test in English, when Title VII children were compared to the comparison group of the same age and language dominance, Title VII children scored significantly higher at every age level.
	On a test of English Reading, when Title VII children were compared to the comparison group of the same age and language dominance, Title VII children scored significantly higher at every age level.
"Relative to national norms, Title VII Hispanic students, across grades, were performing at about the 20th percentile in English reading."[3]	Relative to national norms, Title VII Spanish dominant students were performing between the 37th and 47th percentile in English reading.
MATHEMATICS	MATHEMATICS
"In Mathematics, across grades, (Title VII children) were performing at about the same level as non-Title VII students."[3]	On a test of mathematics skills, when Title VII children were compared to the comparison group of the same age, children scored significantly higher at every age level.
"Relative to national norms, Title VII students were performing at about the 30th percentile in mathematics."[3]	Relative to national norms, Title VII students were performing between the 42nd and 68th percentile in mathematics.

The IBI program was not one of the Title VII programs included in the AIR study. It might be concluded, therefore, that IBI somehow represents one successful program in a generally unsuccessful educational effort. The author feels, however, that the real issues involved are: (1) what are the fundamental requirements for evaluation of effect in a bilingual program, and (2) are the conclusions of the two mentioned evaluations equally credible?

The U.S. Office of Education sets as its standard that the program must (1) be able to show reliable evidence of program effect, and (2) provide credible estimates of how the children would have performed without the program. To meet this later requirement, the AIR impact study used a comparison group model. Their original evaluation design called for school districts included in the study to nominate other classrooms in their district, or nearby districts, that would have children the same as those in the bilingual classrooms in all important variables. Their statement of this research design was as follows:

> Comparison classrooms nominated by each site were to contain students who would qualify for bilingual education and who were essentially the same ethnic background, linguistic competence [emphasis mine], and socioeconomic status as the students in Title VII project schools.[7]

The progress of these children over the year would provide the estimate of how children in the bilingual classrooms would have been expected to perform without the program. (Minor differences in pretest scores to be adjusted for statistically by analysis of covariance.)

The AIR study ran into problems with this evaluation design almost immediately. Out of the thirty-eight school districts included in the study, eighteen indicated they could not identify any comparison classrooms that met the criteria. The twenty remaining districts, however, did nominate classrooms that were used for the comparison group.

Teachers were asked to classify children as to their language dominance. At this point it became evident that the comparison classrooms had students of the same ethnic background as those in bilingual classrooms, but almost all of the students spoke only English (83%, or 1,349, out of the total sample in the Hispanic comparison group of 1,622 children).

Tables are provided of the classification by language dominance of Hispanic children who were present both fall 1975 and spring 1976 when the impact study testing was carried out. Based on teacher classification, 74% of the children in the bilingual classrooms were either non-English speaking or bilingual, compared to 17% in the comparison classrooms as seen in the following table:

Classification by Language Dominance of Hispanic Children Present Fall and Spring 1976[5]

	Title VII Classrooms		Non-Title VII Comparison Group	
Monolingual English	N=1,055	26%	N=1,349	83%
English Dominant Bilingual	N=1,908	47%	N= 188	12%
Spanish Dominant Bilingual	N= 273	7%	N= 8	* (less than 1%)
Spanish Monolingual	N= 860	21%	N= 77	5%

This would seem to present a serious dilemma, e.g., how to examine the effectiveness of an educational program for children who are bilingual or non-English speaking, when only the treatment group contains a significant number of bilingual or non-English speaking children.

The solution used in the AIR Impact Study was to change the evaluation design, eliminating the requirement that the two groups be compared on the basis of similar language competence. The final report issued in March 1978 is careful to leave language competence out of its descriptions of the variables on which a match was found:

> For each Title VII classroom selected for testing, district project personnel were asked to nominate non-Title VII classrooms (comparable students) within their own or within a nearby district whose students matched the Title VII student in terms of (a) ethnicity, (b) socioeconomic status, and (c) grade level [emphasis mine].[6]

Because the subsample of children who could be tested in Spanish was so small (under 5%) in the comparison classrooms, some tables of results in Spanish reading were included but no comparative analysis was attempted. The AIR report stated:

> It should be noted that the Impact Study's original analysis plans had specified the stratification of comparative analyses by judged language dominance group (i.e., separate analyses for groups of students who completed similar combinations of test and questionnaire instruments). However, this approach was not feasible in view of the small number of students in the non-Title VII comparison classrooms who were given test questionnaires developed for Spanish monolingual students or for Spanish dominant bilingual students.[7]

Spanish dominant children were given tests below their actual grade level for English reading. Using expanded scale scores, data were then pooled across all language dominance groups for the tests of program effect. This meant that the "credible estimate of how children would have performed without the bilingual program" was based on the gains made in "other" classrooms by children who were overwhelmingly English monolingual (85% in each of grades 2, 3, and 4). With this evidence the AIR Impact Study reports what they consider to be a "puzzling finding":

> In English Language Arts, participation in an ESEA Title VII Spanish/English bilingual education project did not appear to produce gains in student achievement over and above what would be expected had the students been assigned to a traditional classroom. In fact, in several grades, the non-Title VII students made slightly greater gains in English Language Arts. (A partial explanation of this puzzling finding may be substantially greater amount of time devoted to Spanish Language Arts instruction in the Title VII classrooms.)[8]

The IBI data are based on an evaluation design in which the evidence for how project students would have performed without the bilingual project is based on the accumulation of actual pretests of students who enrolled in the project at different ages, built up over a period of years. In this process a child who entered the program at age four would have a pretest which went into the "project norm group" data bank for four-year-olds. Subsequently, at age five this child's posttests would be compared to the project norm group for five-year-olds (made up from pretests of other children who entered the program at age five). Because the project enrolls more new children at the younger ages the norm group at the upper age levels had to be expanded through some testing in a neighboring school district. The children in this testing met exactly the enrollment criteria used to enroll project children.

This type of comparison group provides an automatic match on such factors at echnicity and socioeconomic level. Age, rather than grade level, is used as the basis for comparative analysis to overcome the problem of out-of-grade level placements which are very common for bilingual children.

The match on language competence between project posttest group and project norm group is accomplished by having all tests given in pairs--achievement tests and a language test together. The comparisons are then made separately by language dominance for curricular areas in which language dominance made a significant difference (reading and vocabulary in Spanish and English). It was found that for mathematics and handwriting, language dominance did not make a significant difference so the tests are pooled.

Attendance is kept individually in the IBI program and children are given posttests after each 100 day's attendance in the program. This means that children are being tested throughout the year. When an evaluation is done the tests are grouped by age and attendance period and primary language classification. Analysis is done to see if the superiority after differing periods of attendance is statistically significant when compared to the project norm group of the same age, and the same language classification. The writer suggests that in answer to the question: "What are the fundamental requirements for evaluation of effect in a bilingual program?" that it would be reasonable to include the expectation that whatever comparisons are drawn be based on groups matched by language dominance.

The IBI data and the AIR data are on a totally different scale in terms of numbers of children tested and mass of data handled. AIR reports that "In all, over 11,500 students in 384 classrooms in 150 schools at 38 different sites across the United States were initially included in the Impact Study Sample." The IBI data are based on one program with three different sites. However, when numbers of children who are Spanish dominant are separately considered, the AIR study is based on 1,133 Spanish dominant children in the treatment group and 85 in the comparison group; the IBI data are based on over 600 tests of Spanish dominant children in the treatment group and over 800 in the project norm (comparison) group. In terms of providing information on children dominant in another language, the category of children who were the prime concern of Congress when it established the bilingual education program, there is much less difference in the scope of the two studies.

It is hoped that the concern for "answers" to the question of the effectiveness of bilingual education will begin to produce more programs with definitive data. The lack of such evaluation seems to this writer to be more related to the problems of how to find suitable tests, norm groups, and comparison groups for linguistic and ethnic minorities than it does to lack of concern for evaluation. Some aspects of the evaluation design used by IBI may be helpful to other programs. The danger in the current mood of "panic" for evidence of effectiveness is that evaluations based on "not quite good enough" comparison groups, or "probably irrelevant" norms from tests standardized with English speaking children will produce a rash of conclusions that will distort rather than clarify the answer to the question: Does Bilingual Education Work?

REFERENCES AND NOTES

1. Cardenas, Jose A. Response I. In N. Epstein, Language, Ethnicity, and the Schools. Institute for Educational Leadership, the George Washington University, 1977.

2. Individualized Bilingual Instruction (IBI) was originally approved by the Joint Dissemination Review Panel in 1973 under the former project title: "Training Migrant Paraprofessionals in the Bilingual Mini Head Start."

3. American Institute for Research. Evaluation of the Impact of ESEA Title VII Spanish/English Bilingual Education Program. In National Dissemination and Assessment Center, Bilingual Education Paper Series, Vol. 2, No. 1, Aug. 1978, Los Angeles, California, p. 17.

4. American Institute for Research. Evaluation of the Impact of ESEA Title VII Spanish/English Bilingual Education Program, Volume I: Study Design and Interim Findings (AIR Report 48300-2/77-FR III), February 1977 (ERIC Report ED 138-090) II-2.

5. Ibid., Tables VI-B-17a, VI-B-18a, VI-B-19a, VI-B-20a, VI-B-21a, Appendix pages 123-127.

6. American Institutes for Research. Final Report: Evaluation of the Impact of ESEA Title VII Spanish/English Bilingual Education Program, March 1978, 5 pp.

7. American Institute for Research. Evaluation of the Impact of ESEA Title VII Spanish/English Bilingual Education Program, Volume I, page VI-17 (plate 180 of ERIC copy).

8. American Institute for Research, Final Report, p. 4.

INTRODUCTION

Individualized Bilingual Instruction, or IBI,* is a bilingual early education program for children preschool through third grade. The children served are from families of migrants or seasonal farm workers. The two languages of instruction are Spanish and English.

The program was started in 1971 under Intermediate School District 104 of Ephrata, Washington (an educational agency that has since been legally dissolved). It currently operates under Sunnyside School District 201 (Washington state).

The name of the program was changed in 1978 at the suggestion of staff of the USOE working with the national diffusion network. The former project title was TRAINING MIGRANT PARAPROFESSIONALS IN THE BILINGUAL MINI HEAD START. USOE is trying to disseminate programs which they feel have been successful to other school districts serving similar populations. They felt that another title would be more descriptive to potential users. Dropping the "Head Start" from the title clarifies that the program is serving children both preschool and school-age up through grade three. Dropping "migrant" from the title clarifies that the program is usable with any bilingual population even through it was developed with migrants. The new program name selected, INDIVIDUALIZED BILINGUAL INSTRUCTION, or IBI, stresses the essential elements of the program; a sequential bilingual program for children preschool through third grade.

Because IBI is an interstate program it has an administrative office in both Washington and in Texas; two operating sites in Washington State and one site in Texas. The Texas site operates a mobile component in which the Texas staff (administrative and training staff, as well as teachers) relocate to northern work sites providing continuing services to children who move from Texas in the migrant stream.

This evaluation represents the thirteenth in a series (the first published under this project name) that have been prepared for the Division of Bilingual Education in the Office of Education.

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*Funded under the previous project name of "TRAINING MIGRANT PARAPROFESSIONALS IN THE BILINGUAL MINI HEAD START."

(All previous evaluations are available in libraries through the ERIC system. A list of ERIC reference numbers is given on page 74.)

The primary funding for this program is from the USOE Division of Bilingual Education, Title VII of ESEA.

This program is a nationally validated bilingual program by the Joint Dissemination Review Panel of the U. S. Office of Education.

The program is also a Developer/Disseminator program in the National Diffusion Network.

Final Evaluation of the 1977-78 Program Year

Number 13 in a Series

Published January, 1979

PROGRAM DESCRIPTION

Originated as an R and D Effort

In 1971 all federal agencies were asked to make "migrants" a priority for services. The Office of Bilingual Education sent out a request for proposals (RFP) to educational agencies requesting a program effort uniquely designed to meet the needs of this service group. This proposal was submitted in response to this RFP through Intermediate School District 104 of Ephrata, Washington (a district providing services to schools which has since been legally dissolved). Its basic concept was that a key problem in educating migrant children is the fragmentation of responsibility for providing educational services caused by the child's frequent moves. The model proposed was therefore an administrative model that was interdistrict in its operation in Washington state, and interstate between Texas and Washington state (also other states to which children moved).

Administration

The program has its administrative office in Pasco, Washington, with a second administrative office in Grulla, Texas (the home base site for the Texas program, and origin of children served in the mobile component which follow children when they move). The funding agency for the program has changed four times in its seven year of program operation, but the basic administration and operation of the program has been the same throughout. At present grant funds go through Sunnyside School District 201 in Washington state--the program operates elsewhere as described subsequently.

Operating Sites

A year-round program is operated at Connell and at Moses Lake, Washington, and in La Grulla, Texas. The Washington sites are in the "Columbia Basin Area" which was reclaimed from desert by the Columbia Basin irrigation project and is now very fertile farming country. Almost all the settlement in the area is new, related to farming made possible by irrigation. A sizeable proportion of the population in the two towns are Spanish speaking families who came in to work the crops. Many have settled out in the area. Many others come in on a seasonal basis.

La Grulla, home base for the Texas program, is a small town almost on the Rio Grande River in the tip of South Texas. La Grulla takes its name from a migrating bird, now extinct. Like the bird, the population of La Grulla almost all migrates every year to do migrant farm work. The employment statistics during the winter a few years ago were 5% (e.g., 95% unemployed during the winter home base period, except for occasional work lasting a few days). Nearly all of the income of the families in town therefore comes from the annual migration to the north. All of the families are Spanish speaking, and Spanish is reinforced by the availability of TV channels received from Mexico.

The mobile component has involved teachers moving north and continuing to provide services to children in temporary work locations. Most of the northern sites are in Washington state, but mobile component teachers have also gone to Illinois, Idaho, and Oregon.

Types of Children Served

About 98% of the children served in the IBI program are Mexican or Mexican American (one or both parents). A very high proportion are monolingual Spanish speakers (46% of those enrolled through April, 1978 when the statistics were collected). This proportion is undoubtedly higher than the proportion of monolingual Spanish speakers in other bilingual programs, in part because this program starts at the preschool level (age three), before the children have had much contact with language outside that in their Spanish speaking home. An additional 26% are listed as Spanish dominant bilingual although this can mean a very very minimal understanding of English. It is operationally defined as a score higher in Spanish than in English on an auditory vocabulary test, with the score in English anywhere past the point where it could be attributed simply to guessing.

The other [illegible] of the children are listed as "primary language English." Of these 9% are considered English dominant bilingual, which means they score best in English on a vocabulary test but have a score above the guessing level in Spanish. 18% are monolingual in English. As in most bilingual programs both of these groups of children also are likely to be deficient in English language skills--most often coming from a family that is or was Spanish speaking but attempts to use English with the children to help them succeed in a predominantly English speaking community. The children in these categories are almost entirely enrolled in the northern sites.

The children are from families in seasonal or migratory farm labor which places them near the bottom of the socioeconomic scale. The age range served is basically three through eight. The program continues to work with children through the third grade.

Staffing

Because of the basic concept of this program--to provide continuity to children who moved about--the teaching staff for the program is entirely adults from the target population (more than half are parents of children served).

Efforts to try programs that moved in the stream with migrant children had been made before this program was started. These tried to staff with certified personnel, and this was almost entirely unsuccessful. There is a shortage of such personnel. The job conditions in such a mobile program are unattractive--few people want to move several times a year, living in temporary housing in remote rural areas if there is an alternative. With "bonus pay" some are willing to do it. Some with a "peace corps" set of values are interested in doing it. However, even these dedicated teachers are hard to use because of the problem of housing in the northern areas. Almost all available housing is reserved for the farm workers. By utilizing other adults from families who were already housed, because some of the family work in the fields, this was not a problem.

The adults in the migrant families also sacrificed in order to teach in this program since, for the limited period of time it is available, farm work pays better than the teaching salaries they received. But the teaching position offered year-round pay which offset the loss of the higher income they could have made with the seasonal work. The teaching adults recruited brought a special understanding and commitment to the job from first-hand knowledge of the difficulty of obtaining an education for a child moving in the migrant stream.

It was for this reason that one fundamental premise of the program was that it must work using previously untrained and inexperienced bilingual adults recruited from the target population. Certified staff are hired by IBI, but in the IBI program they work as supervisors and trainers--backup staff for the paraprofessional teachers, and do not work directly with children unless filling in as a substitute.

The problem of having to move staff obviously did not apply to the operation of the year-round sites. However, it was decided to have one basic program model and to use adults from the target population as teaching staff in these areas as well. Since there was a real shortage of available bilingual certified people in all three sites, this decision met existing circumstances. The few that could be hired were stretched by virtue of having them oversee a number of paraprofessional teachers and under them quite a few more bilingual children than could have been taught directly by the bilingual certified teachers.

This decision accounts for the cumbersome title by which the project originally went: "Training Migrant Paraprofessionals in the Bilingual Mini Head Start." A great deal of the development effort went into selection of curriculum materials that could be effectively used by paraprofessional staff, as well as field testing training methods to see what methods worked best to quickly produce competent teaching in previously untrained staff.

It should be noted that IBI is now disseminating its curriculum and methods to other sites. Nearly all of these sites have the usual combination of certified teachers and aides, and the certified staff have been very impressed with the training as valuable to them. It was designed to be very thorough and specific because this was necessary for inexperienced people. It also seems to have produced training that is well accepted by and easily utilized by professional teachers, however.

Curriculum

All curriculum materials used by IBI can be individualized or taught in small groups. Each has the sequencing built in so that the teacher does not need to have the knowledge on how to develop concepts from simple to more complex. Most of the materials are carefully programmed, so that even review is built in meaning that children retain what they have learned and add to it. The IBI model attempts to provide continuity not only in a geographic sense, but from year to year, and preschool to school. Each academic area has a continuous track curriculum from preschool through third grade. IBI has developed mastery tests keyed to the curriculum materials used, which help in placement of the child, and also help in planning remediation if the child forgets something during a move.

Most of the curriculum materials are relatively self contained, using a teacher presentation book or child workbooks, or consumable worksheets such as in handwriting. IBI avoided materials which had to have a lot of teacher preparation, because many IBI teachers handle two or three groups a day, each for a limited release time period, and cannot spend extensive time in preparation. The use of one set of materials for teaching of reading, or of math, goes contrary to current trends with are to use management systems and to index a wide variety of curriculum resources. A program that moved obviously could not carry a "resource room" with it. However, even in the year-round sites, it was decided to limit the curriculum materials to one series because it was found that the most effective teacher training was that which was most specific to the curriculum used--that limiting the curriculum to a manageable set meant teachers could be trained to use it effectively in a relatively short time.

Language of Instruction

All teachers are bilingual. They use both languages in teaching depending on what the child seems to understand. Children of mixed language capacity will be assigned in the same group, so the children who do not use much English will hear it used with other children even if the teacher uses Spanish most of the time in communicating with that child. It has not been found practical or useful in the IBI program to strive for any particular "percentage" of use of one language or the other. It has not been the policy to establish any period in which use of the other language is "restricted" to force children to learn the language of choice. The results of this policy and practice seem to be validated by the gains the children make in both language and academic subjects.

Classroom Organization

The preschool centers operated at the year-round sites have academic work areas where children work at small tables with the teacher moving around them, or where the children sit around the teacher for a lesson involving a teacher presentation book. The rest of the space is divided between open area for larger group activities and interest centers, common to most preschools. The school age program uses similar work areas, and have a corner or bookshelf to keep activities and materials to be used during independent choice periods.

The daily schedule has academic periods in which the teacher organizes and manages the learning time. It also has child choice periods in which the child selects and organizes use of his time. The choice periods are used as a reinforcer for the shaping of academic behavior--access to the materials and activities is contingent upon completion of "contracts" for the academic materials, or in token exchange for tokens earned during the academic period in some subjects. In disseminating the program IBI has taken the position that use of a tokens or contracting system is optional to the adopting district, but that use of the positive reinforcement teaching methods is essential, whether or not it is backed up by time management or tangible reinforcers. IBI has appropriate training instruments for any of these options, and all have been field tested at IBI sites.

Dissemination Services and Costs

The IBI curriculum and training materials are available for adoption by other districts. (Thus far there has been no interest in the adoption of the interstate delivery system.) The curriculum areas can be adopted as single components.

The requirements of an adopting district are that they have the staff capacity to teach children in small groups under teachers or aides, and that they purchase necessary curriculum materials, provide time for training of staff by IBI, plus assigning some person responsibility for on-site continuing in-service, and that they be willing to evaluate their results in some way to be mutually worked out by the adopter and IBI. IBI makes available at cost curriculum materials it has developed, training instruments (which can be locally reproduced), initial staff training (only cost to adopting district is travel and per diem for visiting trainers), and follow-up visits as requested during the startup phase. In areas where IBI has a large number of adoptions and potential adoptions (California) the costs are minimized by having IBI travel costs to the state shared by more than one district.

If the local district cannot manage the costs, most are eligible for Title IVC grants available to districts choosing to adopt validated programs, and managed by the state office of education.

Program Effectiveness

Information on effectiveness of the IBI program in each of its components is detailed in the annual evaluation. Quickly summarized, the children have greatly increased their achievement in language, math, reading, and knowledge of cultural concepts at all ages, and the preschool children have made significant gains in academic readiness skills and handwriting. These results have been verified by outside evaluation specialists. They have been accepted as providing "credible evidence" of an effective educational program by the Joint Dissemination Review Panel of USOE.

INSTRUCTIONAL COMPONENT

GOAL 1. CHILDREN THREE TO FIVE WILL LEARN PRESCHOOL CONCEPTS.

THE NEED: IBI children who are three, four, or five are tested using the Cooperative Preschool Inventory. This is a nationally standardized test originally developed to measure the outcome of Head Start programs. It is published in Spanish and English, and project children are tested in their primary language. It measures concepts usually considered important as school readiness skills: the ability to understand and follow directions, size and number concepts, the recognition of colors and shapes, etc.

The project has compiled pretest scores of children who have entered the program at different ages over the past seven years. These scores represent the level of skills project children would have demonstrated without benefit of the program. As shown in Figure 1 which follows, without the program three-year-old children had an average score at the 30th percentile--i.e., out of a national sample 30 percent of children had scores this low or lower. Four-year-old children had average scores at the 35th percentile. Five-year-old children served by the project averaged scores at the 43rd percentile. In summary the target population for this program start out with preschool concept or school readiness skills in the lower half--almost the lowest third, compared to children tested in the national sample.

THE IBI CURRICULUM: IBI combines concept and language learning using the DISTAR Language curriculum published in English by SRA, and published in Spanish by Bilingual Mini Schools (a non-profit corporation which developed the Spanish translation for the IBI program, and is now licensed by SRA to sell the Spanish edition to any schools that would like to use it).

This curriculum is taught to a small group of children from a teacher presentation book. The concept content includes such things as comparisons (the glass is full, the cup is empty); positional words (the paper is on the book, the dog is under the table); classification (a dog and a mouse are animals); etc. The 1976 edition has an "action track" in which children follow simple commands. Use of physical actions and use of real objects to supplement the picture presentation help add meaning, especially for younger children.

The IBI staff developed a "Pre-DISTAR" series of lessons for very young children (threc and early four) in Spanish and English. These lessons require children to make pointing responses or oral responses that require only single words to two word phrases. This is used as a transition into the published DISTAR which requires children to use whole sentences in responding almost from the beginning lessons.

Lessons are given in each language to preschool children, at least 20 minutes a day in Spanish and another 20 minutes a day in English. In this way children learn the meaning of the concept in their primary language, and it is then reinforced as they learn the vocabulary in their second language. In addition to these lesson periods, two or three unstructured learning periods (child choice) take place each day, and concept learning activities using a variety of common preschool play materials take place in these periods.

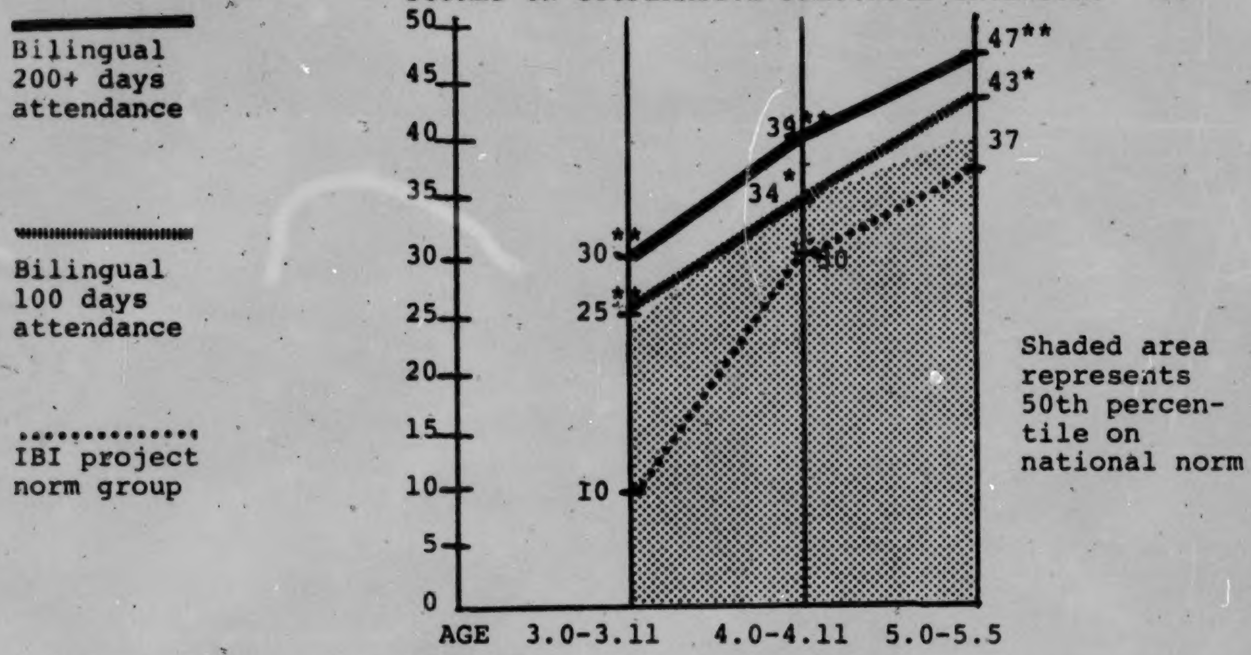
PROJECT RESULTS: Figure 1, which follows, shows the average score by age level expressed in terms of percentile rank (using national norms) for four groups: the project norm group, the national norm group, and two groups of children from the IBI program (100 day test group showing short term program effect, and 200+ day test group showing longer term program effect).

The project norm group average score is well below the national norms for this test--almost in the bottom third compared to children in the national sample. This represents the expected level of achievement project children would have had without the bilingual program since it is made up of pretest scores of children who started the program at different age levels. Scores on this test have been pooled for children whose primary language was Spanish or English as there was found to be no significant difference based on language classification.

The short term Bilingual Group (100 day attendance) has an average score just at the national norm (50th percentile) at age four. It is slightly above the national norm at age three and quite a bit above the norm at age five (66th percentile). This group was included in the analysis because many school districts serving bilingual migrant children do not have such children for a full school year. If these school districts are considering use of the IBI curriculum, this represents the effectiveness even after a period of five months or less program attendance. The statistical analysis was done on raw scores (test scores details are shown in Table 4 in the Technical Appendix). As noted, even the short term program effect produces a superiority that is statistically significant at the .01 level (e.g., possibility that this much superiority would occur by chance less than 1 in 100).

The long term Bilingual Group (tests after 200 days in attendance) are markedly higher than the project norm group, higher than national norms and higher than the short term bilingual group. The percentile rank is in the top third compared to national norms. For five year olds the percentile rank (78th percentile) is in the top quartile by national norms. The superiority for the 200+ day attendance group over the project norm group (expected performance without the program) is statisticallly significant beyond the .001 level (possibility of occurance by chance less than one in 1000).

It is possible for differences in test scores to be statistically significant even when they are not particularly educationally significant. If a difference between groups exceeds half a standard deviation there is a "rule-of-thumb" standard that this much difference would be considered educationally significant. At each level, as shown in Table 4 in the Technical Appendix, the superiority of scores by children in the 200+ attendance group is more than one full standard deviation higher than the average score of the project norm comparison group. This would indicate that the gains made by children are educationally significant, and that the IBI program is quite powerful in bringing children up to and above national norms on the type of school readiness skills measured by this test.



National Percentile Scores:		3.0-3.11	4.0-4.11	5.0-5.5
	IBI 200+ Day:	69th	67th	78th Percentile
	IBI 100 Day:	53rd	50th	66th Percentile
	Project Norm:	30th	35th	43rd Percentile

*Statistically significant at .01 level over project norm group
**Statistically significant at .001 level over project norm group
Detailed test scores analysis is shown in Table 4 in the Technical Appendix.

FIGURE 1. MEAN RAW SCORE ON COOPERATIVE PRESCHOOL INVENTORY, BY AGE GROUPS AND PERIOD OF ATTENDANCE IN IBI BILINGUAL PROGRAM, COMPARED TO NATIONAL NORMS.

TO SUMMARIZE THE FINDINGS IN FIGURE 1:

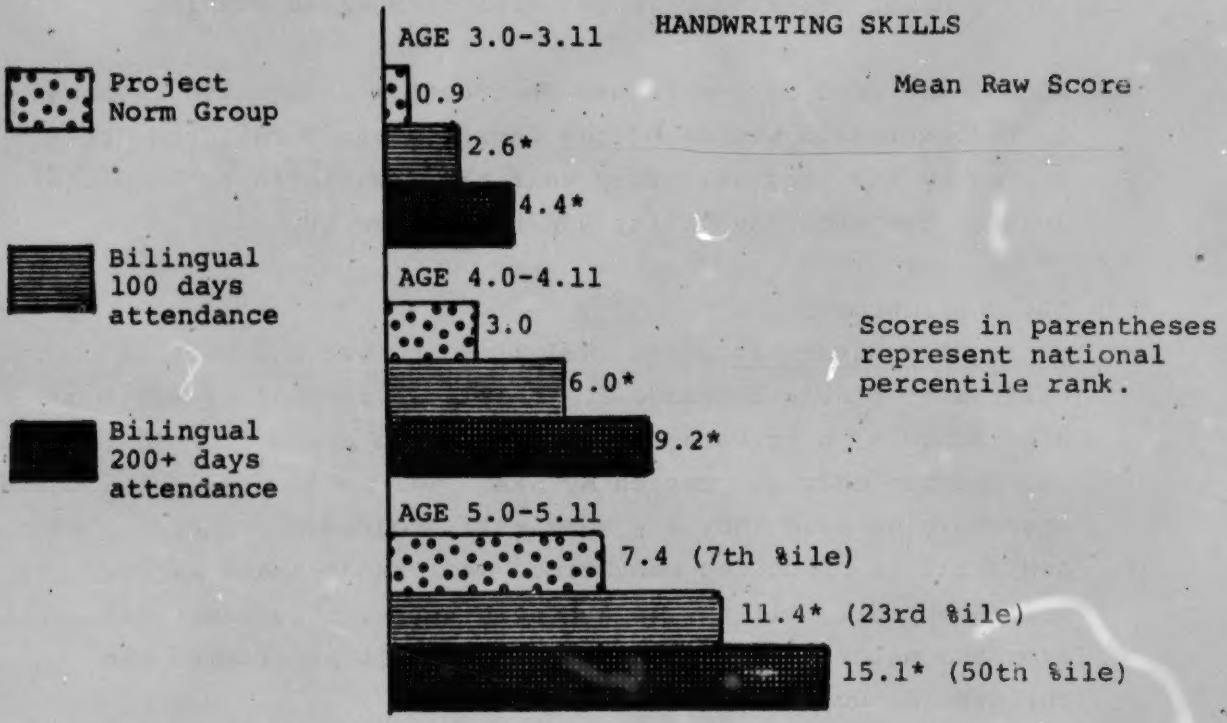
1. WITHOUT THE PROGRAM, PROJECT CHILDREN IN THE NORM GROUP SCORE WELL BELOW AVERAGE COMPARED TO THE NATIONAL NORM GROUP FOR THIS TEST.
2. THE SHORT TERM ATTENDANCE IN THE BILINGUAL PROGRAM (100 DAYS) BRINGS CHILDREN ABOUT EVEN WITH THE NATIONAL NORMS AT AGE THREE AND FOUR, AND INTO THE TOP THIRD OF THE NATIONAL NORMS BY AGE FIVE.
3. LONG TERM ATTENDANCE IN THE BILINGUAL PROGRAM (200 OR MORE DAYS) MEANS CHILDREN AVERAGE SCORES IN THE TOP THIRD BY THE NATIONAL NORMS FOR THIS TEST AT AGES THREE AND FOUR, AND IN THE TOP QUARTILE FOR CHILDREN AT AGE FIVE.
4. THE SUPERIORITY OF CHILDREN AFTER ATTENDANCE IN THE BILINGUAL PROGRAM OVER THE PROJECT NORM GROUP IS STATISTICALLY SIGNIFICANT (.01 LEVEL INDICATES THE POSSIBILITY THAT THIS MUCH SUPERIORITY WOULD OCCUR BY CHANCE IS LESS THAN ONE IN 100).

GOAL 2. CHILDREN LEARN HANDWRITING SKILLS.

THE NEED: IBI teaches handwriting as part of the preschool readiness program. The project measures children's visual-motor coordination skills by means of the preschool level of the spelling subtest of the Wide Range Achievement Test. In this test the child is asked to copy 18 marks of increasing difficulty and print two letters of his name. A percentile ranking of scores is available for five-year-olds. The average score by project five-year-olds when pretested is 7.3 which places them at the seventh percentile compared to national norms, e.g., only 7 percent of the children tested at this age nationally had a score this low or lower. Norms are not available for children younger than five.

THE IBI CURRICULUM: IBI uses a handwriting curriculum developed by the University of Kansas for their Follow Through and Head Start programs. These consist of a series of 29 ditto masters from which practice handwriting sheets are duplicated by the project. With these the children shape their handwriting skills to greater levels of coordination. Each child can work at his own pace through these materials. After completion of the "levels" as the University of Kansas materials are called, the children go into a project adapted version of a handwriting series that is now out of print, Lyons and Carnahan "Write and See." The project has resequenced these materials and added in-book tests which teachers can use to check children's ability. For the youngest children not yet ready to hold a pencil, pre-handwriting exercises are given using chalk, crayons, etc. Children learn left-right sequencing and working from the top to the bottom of a page from this curriculum. Lessons approximately 10 minutes in length are given daily to preschool children.

PROJECT RESULTS: Figure 2 which follows shows the average scores of children when they enter the program, of children who have had 100 days attendance, and children who have had 200+ days attendance. (Additional statistical detail is shown in Table 5 in the Technical Appendix.) Each added period of attendance shows a sharp increase in skills, for each age group. National norms are available only for the children in the five-year-old group. As noted before, the average score of the children on pretest places them at the 7th percentile by national norms (only 7 percent of children in the national sample had scores this low). Children with 200+ days attendance have a score which ranks them at the 50th percentile. In summary, children who would have showed a severe deficit in this area are able, through the individualized program, to reach school-age with skills up to national norms.



*The superiority of this score over the project norm group of the same age is statistically significant beyond the .001 level. Detailed test scores analysis is shown in Table 5 in the Technical Appendix.

FIGURE 2. MEAN RAW SCORE AFTER VARIOUS PERIODS OF ATTENDANCE BY IBI PROJECT CHILDREN ON SPELLING SUBTEST OF WIDE RANGE ACHIEVEMENT TEST.

TO SUMMARIZE THE FINDINGS IN FIGURE 2:

1. THE INDIVIDUALIZED HANDWRITING CURRICULUM USED BY IBI PRODUCES STEADY IMPROVEMENT IN CHILDREN'S SCORES THE LONGER THEY PARTICIPATE IN THE PROGRAM.

2. THE GAINS ARE STATISTICALLY AND EDUCATIONALLY SIGNIFICANT EVEN AFTER 100 DAYS (SHORT TERM INTERVENTION); WITH THE SUPERIORITY EVEN GREATER AFTER 200 DAYS.

3. BASED ON NATIONAL NORMS FOR THIS TEST, CHILDREN ENTER THE PROGRAM WITH AN EXTREMELY LOW LEVEL OF SKILLS (7TH PERCENTILE). BY 200+ DAYS ATTENDANCE THEIR AVERAGE SCORE IS AT THE 50TH PERCENTILE, BASED ON NATIONAL NORMS. (NORMS ARE NOT AVAILABLE BELOW AGE FIVE.)

GOAL 3. SPANISH SPEAKING CHILDREN WILL IMPROVE IN SPANISH.

THE NEED: The need for continued instruction in Spanish is based on the expressed wishes of the families whose children are served by the program. They want their children to keep their Spanish language capability and to improve it.

THE IBI CURRICULUM:

Curriculum Materials Used: IBI field tested the Spanish edition of DISTAR Language I, translated for IBI by Bilingual Mini Schools, a private corporation which has a license to sell the Spanish edition granted by SRA. The project selected these materials because they are very well programmed; that is, each new skill is practiced many times and then re-used as new skills appear. All skills are cumulative; they never disappear from the material. And because it is well programmed the children do not make frequent errors.

Spanish DISTAR is taught in a small group from a teacher presentation book which clearly outlines the dialogue used in teaching--a feature which is very helpful to a paraprofessional teacher. It involves a fast paced verbal exchange in which children would be expected to make from 150 to over 200 language responses during a 20-minute lesson period. Because the language responses require both phrases and whole sentences, the children learn to use the language with all its connecting words instead of learning an isolated vocabulary which often occurs with other language approaches.

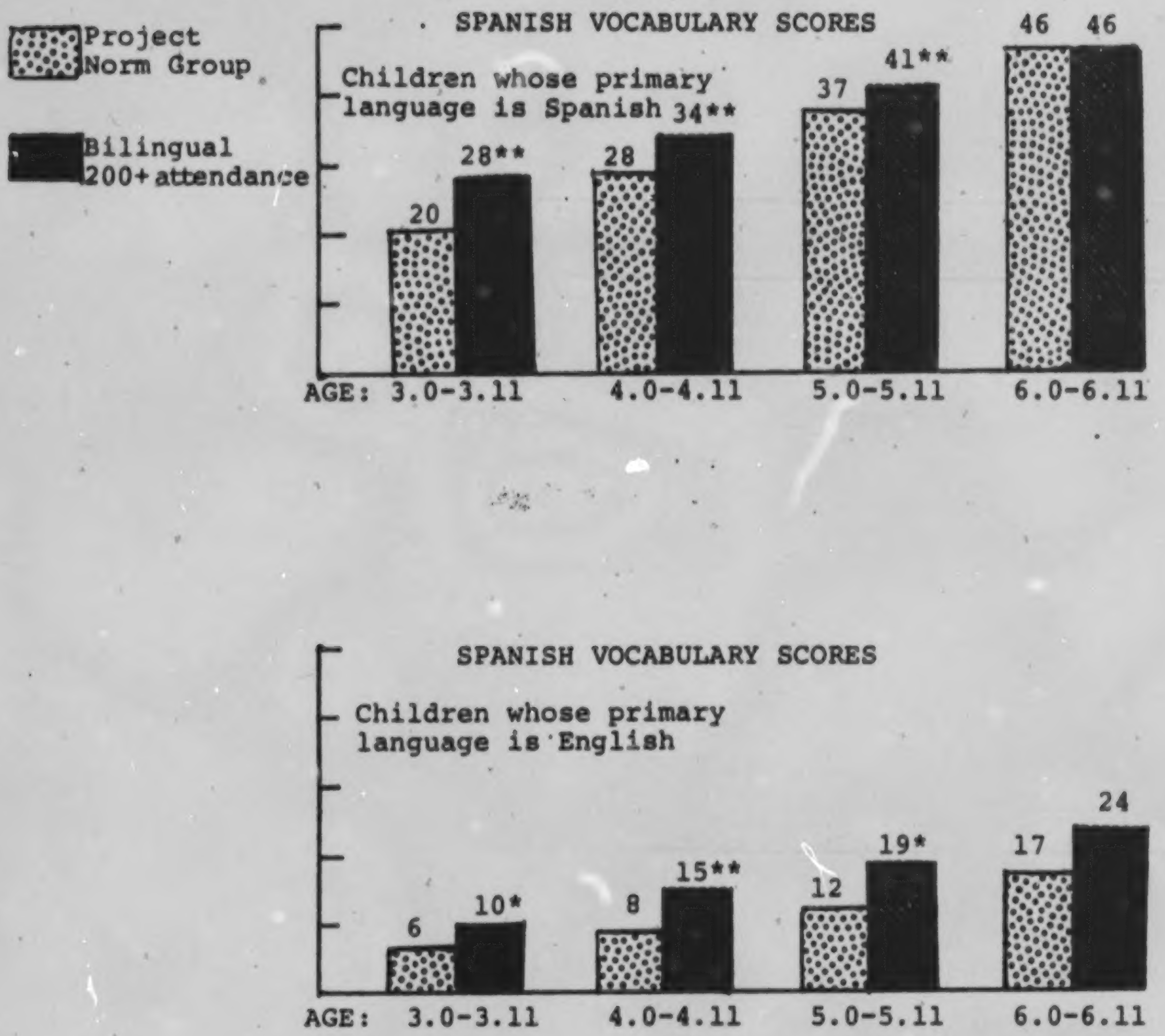
The IBI program accepts very young children, age three and four, for whom a curriculum called "Pre-DISTAR" has been developed by the project. This curriculum begins with action responses and then requires one- or two-word responses. Children can use it who are not yet ready for whole sentence responses required in the regular DISTAR series. Pre-DISTAR is in both Spanish and English.

Lesson periods in oral Spanish of approximately 20 minutes per day are given all children in the preschool program and up to first grade. (DISTAR Level I is appropriate to the first grade level. Level II is not yet available, so the project is waiting to extend the oral language program to the older school age children.)

In addition to the lessons in oral Spanish, all staff are bilingual and use both Spanish and English in the teaching of other subjects and in informal conversation throughout the day.

PROJECT RESULTS: Test results are reported separately by the child's primary language classification in Figure 3 which follows. These test results indicate that children whose primary language is Spanish have scores two to three times as great on this test than those whose primary language is English. However the average scores of children after 200 days attendance improve within each language group.

Table 6 in the technical appendix gives the statistical detail of the Spanish vocabulary test scores. As indicated, the superiority in Spanish of children after 200 days in the IBI program is statistically significant at age three, four and five, over the project norm group of the same age and language dominance. At age six the average score of English dominant children is superior to the norm group, but because of high variance within the group the difference is not statistically significant. The average score of six year old Spanish dominant children is the same for both project and norm group. One possible explanation of this is that only level one of the Language curriculum is available in Spanish (there are three levels in English and the curriculum is used up through third grade). The Spanish dominant children move through the curriculum in Spanish much more quickly than through the English curriculum and many who enter the IBI program as preschoolers have completed the available curriculum before age six. The project hopes to have the second and third levels of the curriculum available in the future which would enable the continuation of formal instruction in Spanish to a higher age level.



*The superiority of this score over the project norm group is statistically significant at the .01 level.

**Superiority over project norm group significant at .001 level.

Scores of children after 100 days attendance used because of an insufficient number of 200+ day tests for analysis at age three. Detailed test scores analysis is shown in Table 6 in the Technical Appendix.

FIGURE 3. MEAN RAW SCORES IN SPANISH VOCABULARY ON IBI TRANSLATION OF FORM B OF THE PEABODY PICTURE VOCABULARY TEST BY PERIOD OF ATTENDANCE, AND PRIMARY LANGUAGE CLASSIFICATION.

TO SUMMARIZE THE FINDINGS IN FIGURE 3:

1. BOTH SPANISH AND ENGLISH DOMINANT CHILDREN SHOWED GAINS IN SPANISH UNDER THE IBI CURRICULUM.
2. COMPARED TO THE AVERAGE SCORES OF THE PROJECT NORM GROUP OF THE SAME PRIMARY LANGUAGE CLASSIFICATION, THE SUPERIORITY AT AGE THREE, FOUR AND FIVE IS STATISTICALLY SIGNIFICANT.

GOAL 4. SPANISH SPEAKING CHILDREN WILL IMPROVE IN ENGLISH.

THE NEED: When children enter the IBI program they are given the Peabody Picture Vocabulary Test in English and in Spanish, using different forms of the test. Based on these entry tests for project children, 73% have a higher score in Spanish than in English. Of these children 46% have a score so low in English that it is within the range that could be obtained by guessing, and would be considered Spanish monolingual, as shown in Figure 4 (below). Even the children who are classified as English dominant are, in fact, very limited in their English skills.

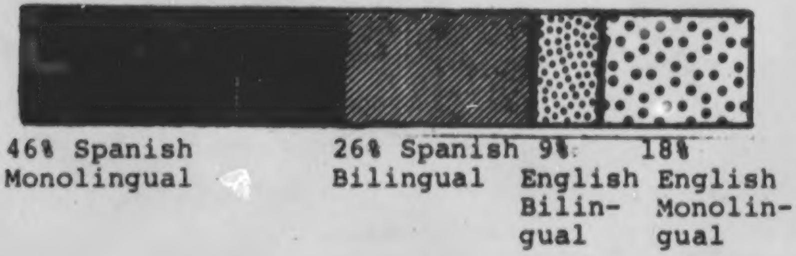


FIGURE 4. LANGUAGE CLASSIFICATION OF CHILDREN ENROLLED IN IBI PROGRAM THROUGH APRIL, 1978 BASED ON ENTERING SKILLS IN LANGUAGE.

IBI CURRICULUM: As described earlier both English and Spanish are taught each day (sometimes every other day depending on the length of time available with the children at a particular site). The DISTAR Language curriculum is used. This is carefully programmed, provides fast paced oral language practice, use of the language in context and in whole sentences. The context of the lessons involves language useful to understanding school usage vocabulary, reasoning skills, and readiness concepts.

The English Language curriculum is available from SRA at three levels and is used through third grade (the project only goes to third grade). Children are started on the program at the preschool ages. If the children are very young they started in the IBI.

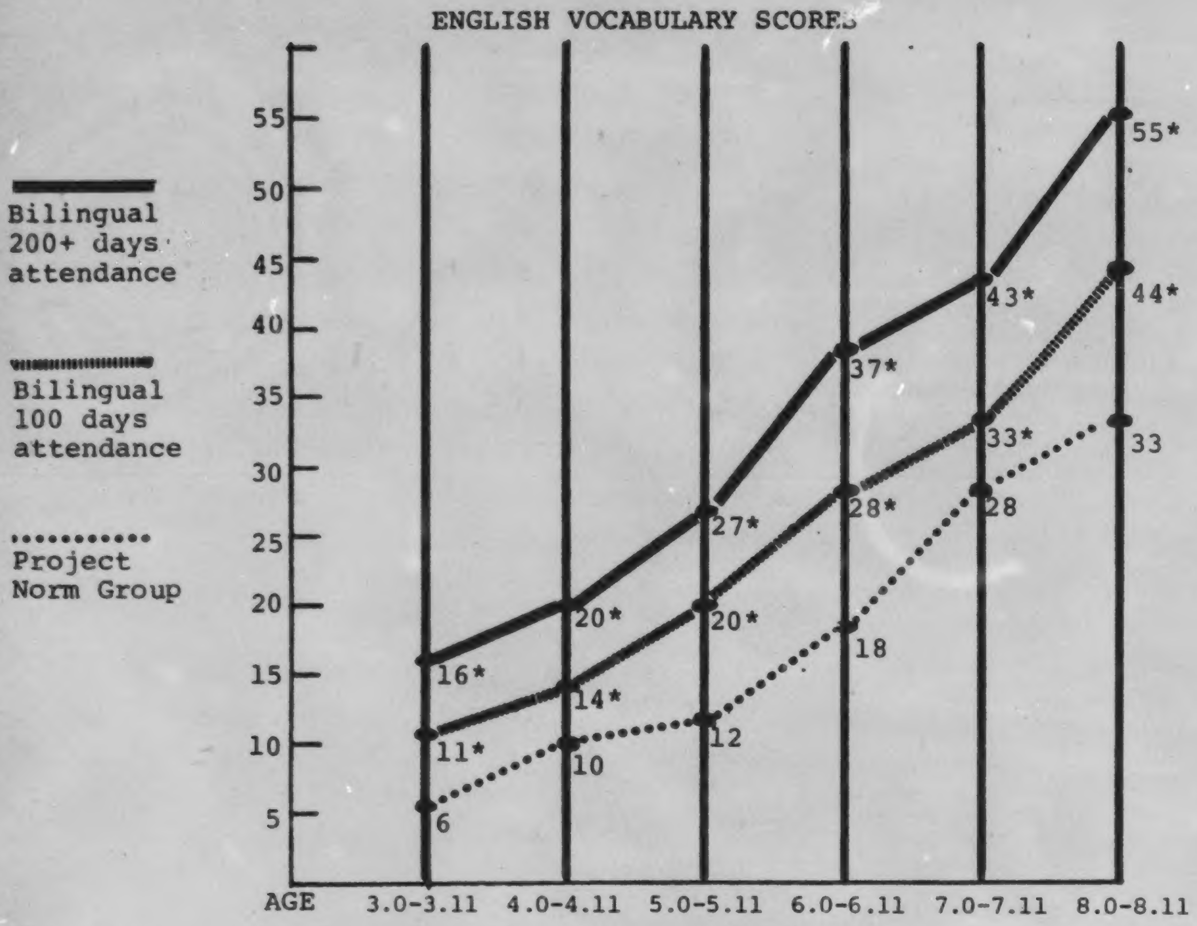
Pre-DISTAR curriculum. This shapes their ability to follow a teacher presentation in a small group, respond when asked, and starts with pointing responses leading into responses that require use of one or two words.

In addition to lessons in oral Spanish and English, both languages are used in teaching other academic subjects and informally interacting with children during child choice activity periods, group activities such as singing, etc.

PROJECT RESULTS: Figure 5 illustrates the superiority in English vocabulary scores by IBI Spanish dominant children after different periods of program attendance over the scores of Spanish dominant children of the same age in the project norm group.

The project norm group scores represents the level of English children of different ages had before they had a chance to participate in the bilingual program. Many migrant programs can only serve children for a short term, so the scores after 100 days attendance shows the "short term" effectivemess of the IBI program. Even within this limited time period English scores increase to a level that is statistically significant at the .001 level. The scores of children after 200+ days is almost twice that achieved in 100 days in the IBI program.

A rule-of-thumb measure of when a difference in scores is enough to be considered "educationally" significant is when the spread between the scores is more than half a standard deviation. As shown in Table 7 (see Technical appendix) the gains of children in the IBI program are two or three times more than this standard and would therefore be considered very large gains for the period of program intervention involved.



*The superiority of this score over that of the project norm group of the same age is statistically significant beyond the .001 level. Detailed test scores analysis is shown in Table 7 in the Technical Appendix.

FIGURE 5. ENGLISH VOCABULARY SCORES ON FORM A, PEABODY PICTURE VOCABULARY TEST, OF CHILDREN WHOSE PRIMARY LANGUAGE IS SPANISH, BY AGE AND ATTENDANCE GROUP.

TO SUMMARIZE THE FINDINGS IN FIGURE 5:

1. COMPARISON TO THE AVERAGE SCORES IN ENGLISH OF THE PROJECT NORM GROUP SHOWS SIGNIFICANT SUPERIORITY FOR BILINGUAL PROGRAM CHILDREN AT EVERY AGE LEVEL. IN ALL CASES THIS SUPERIORITY IS SUFFICIENT TO BE STATISTICALLY SIGNIFICANT BEYOND THE .001 LEVEL (E.G., AN EXCEEDINGLY SMALL POSSIBILITY THAT THIS MUCH DIFFERENCE WOULD OCCUR BY CHANCE).

2. CHILDREN AFTER 200 DAYS ATTENDANCE ARE MARKEDLY SUPERIOR TO THOSE TESTED AFTER ONLY 100 DAYS ATTENDANCE, INDICATING THAT THE GAINS IN ENGLISH ARE PROGRESSIVE THE LONGER THE PERIOD OF ATTENDANCE.

GOAL 5. CHILDREN WILL INCREASE THEIR SKILLS IN MATH.

THE NEED: IBI uses the Wide Range Achievement Test, math subtest, to measure children's skills in math. This is a nationally standardized test. Based on the national norm group, the average score of children before attending the bilingual program was at the 9th percentile at age five, and at the 19th percentile at ages six, seven and eight. This means that only 19 percent of the children in the national norm sample had scores this low or lower. It indicates that without the program this target population would have been expected to be far below national norms in math.

THE IBI CURRICULUM: The IBI project has developed and published a pre-math curriculum in Spanish and English for the pre-school age children. This is taught in small groups and in math related independent activities. Children learn numeral recognition, counting sequence, making sets, the concept of equal, etc.

After the pre-math series children begin using consumable workbooks published by Random House under the trade name of Singer "Sets and Numbers." This curriculum is based on set theory and is taught in units. IBI uses this series up through third grade (the upper level in this series uses hard cover books instead of the consumable workbooks).

These math materials can be completely individualized and a teacher can successfully work with a group all of whom may be on different pages or even in different books. Because of the disruptions in schooling experienced by a migrant population, the project used as one important criterion in the selection of curriculum materials whether the materials can be individualized.

The Sets and Numbers series are published in English only. This has presented no obstacle in their use by bilingual students taught by bilingual paraprofessional teachers. The teachers use both Spanish and English working with the students, for instructions, praise and correction. English terminology is used for the mathematical terms and concepts. Since these are new concepts to the children in whichever language they are encountered, the English terminology readily becomes part of their vocabulary.

PROJECT RESULTS: The math subtest of the Wide Range Achievement Test was given to project children in English or in Spanish (project translation). It was found that language is not a major factor on the test and that there were no significant differences in pretest scores accumulated for the project norm group based on language dominance. Therefore the test scores in math were pooled for analysis.

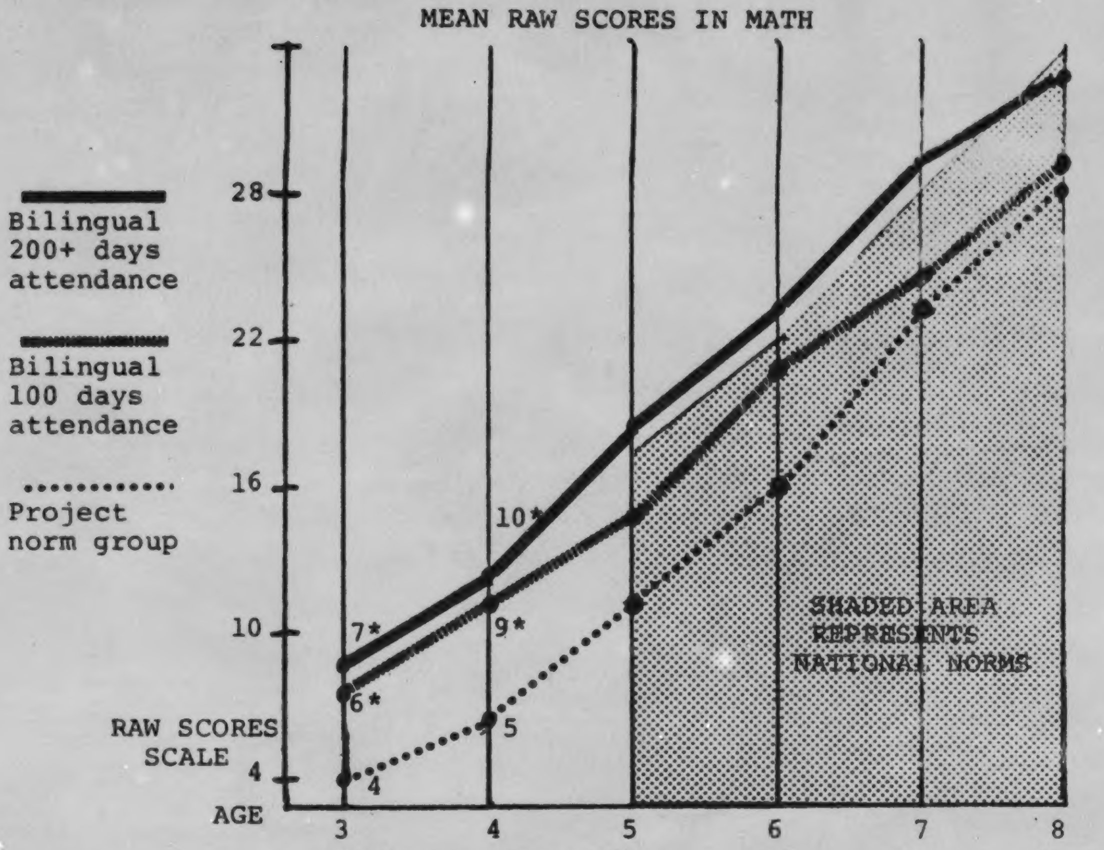
The graph on Figure 6 on the following page shows that children in the project norm group averaged scores far below the national norm. Short term project attendance (100 days) produced higher scores at every age level. The superiority after 100 days is statistically significant for children age three through six. The difference is not enough to be statistically significant at ages seven and eight. For statistical detail see Table 8 in the Technical Appendix.

Children who attended the IBI program for 200+ days had scores markedly higher than either the project norm group or children tested after 100 days attendance. The average score is also above national norms through age seven, slightly below the national norm at age eight. For statistical detail see Table 8 in the Technical Appendix.

Without the program the average score in math achieved by project children was below the 19th percentile by national norms. For students in the bilingual program the minimum 200 days, the percentile scores ranged from 42nd to the 68th percentile at different age levels.

The superiority of scores after 200+ days attendance was statistically significant at every age level, three through eight, beyond the .001 level of significance, (the possibility that this much superiority would occur by chance less than one in 1000). See Table 8, Technical Appendix.

Using the rule of thumb that a score more than half a standard deviation higher than the reference group would also be considered educationally significant, the superiority of children at every age level in the bilingual program with the minimum 200 days attendance would be considered educationally significant. At all but age eight the difference is more than one full standard deviation higher than the reference project norm group of the same age.



		5	6	7	8
	National Norm =	100.0	100.0	100.0	100.0
Mean Standard Scores	IBI 200 day =	104.6*	107.3*	101.3*	97.2*
	IBI 100 day =	94.7*	96.6*	91.8*	90.8
	Proj. Norm =	80.5	86.8	86.9	87.6

*The superiority of this score over the project norm group of the same age is statistically significant beyond the .001 level. Detailed test scores analysis is shown in Table 8 in the Technical Appendix.

FIGURE 6. SCORES ON THE MATH SUBTEST OF THE WIDE RANGE ACHIEVEMENT TEST, BY AGE AND PERIOD OF ATTENDANCE IN IBI PROGRAM.

TO SUMMARIZE THE FINDINGS IN FIGURE 6:

1. WITHOUT THE BILINGUAL PROGRAM SCORES OF TARGET CHILDREN IN THE PROJECT NORM GROUP ARE FAR BELOW NATIONAL NORMS.
2. SHORT TERM ATTENDANCE (100 DAYS) IN THE BILINGUAL PROGRAM PRODUCES HIGHER AVERAGE SCORES THAN THE PROJECT NORM GROUP AT EVERY AGE LEVEL; HOWEVER STILL BELOW NATIONAL NORMS.
3. CHILDREN IN THE IBI PROGRAM FOR 200 OR MORE DAYS SCORE HIGHER AT EVERY GRADE LEVEL THAN EITHER THE PROJECT NORM GROUP, OR CHILDREN IN THE BILINGUAL PROGRAM ONLY 100 DAYS. THE SUPERIORITY OF THESE SCORES OVER THE PROJECT NORM GROUP AT EVERY AGE LEVEL IS STATISTICALLY SIGNIFICANT BEYOND THE .001 LEVEL.
4. THE IBI BILINGUAL GROUP WITH 200+ DAYS ATTENDANCE ALSO AVERAGES SCORES IN MATH ABOVE NATIONAL NORMS AT ALL AGE LEVELS EXCEPT AGE EIGHT.

GOAL 6. CHILDREN WILL GAIN READING SKILLS IN ENGLISH.

THE NEED: Children are tested on the reading subtest of the Wide Range Achievement Test for English reading. Tests are analyzed separately for children whose primary language is English and those whose primary language is Spanish because children differed significantly on their entry skills on this test based on language group.

As shown on Table 8 in the Technical Appendix, the entry level scores of children in the project norm group whose primary language was English were below the 25th percentile by national norms. The norm group scores of children whose primary language was Spanish all averaged below the 10th percentile by national norms (e.g., ten percent of children in the national norm sample had scores this low or lower.

THE IBI CURRICULUM: The preschool reading program in IBI is started at about age four using the University of Kansas Reading Primer, which was developed for the Behavior Analysis Head Start and Follow Through programs. The teacher holds a teacher presentation book and children sit in a semi-circle around the teacher. Children learn to respond to pictures going from left to right and from the top to the bottom of the page, and the basic skill of blending sounds. With these word attack skills the children are then able to begin in the Sullivan programmed reading series, published by McGraw-Hill. Once into the Sullivan program, the children can work at their own pace in an individualized program.

The Sullivan materials use a phonetic approach with a controlled vocabulary so that the beginning reader only has to remember one sound for each letter (except for a limited number of irregular words which are taught as sight words). This feature of the curriculum was found to be especially helpful to children whose primary language is Spanish. It means they do not have to cope with the many different sounds which letters take in English until after they have mastered the beginning reading skills of word attack, blending, etc.

The curriculum is programmed so the new material is introduced slowly with continuous review of what has been learned before. The picture illustrations are clear and uncluttered which is helpful to comprehension of a child for whom English is a second language.

The teacher circulates children working in a small group at a table. Workbooks are starred by the teacher for new sounds and children raise their hands for assistance when they come to a star. This enables the teacher to help the child with the new sound on a one to one basis. The child repeats the sound so the teacher can check that the child is both hearing and making the correct sound when it is first encountered. This avoids the confusion Spanish speaking children may have in distinguishing sounds in English that are not found in the Spanish language. The teachers are also trained to ask many comprehension questions as they check children's work, and can make explanations in Spanish if there is a comprehension problem.

A teacher is easily able to work with a small group of children each working on a different page, even in different books (there are 23 books in the Sullivan reading series).

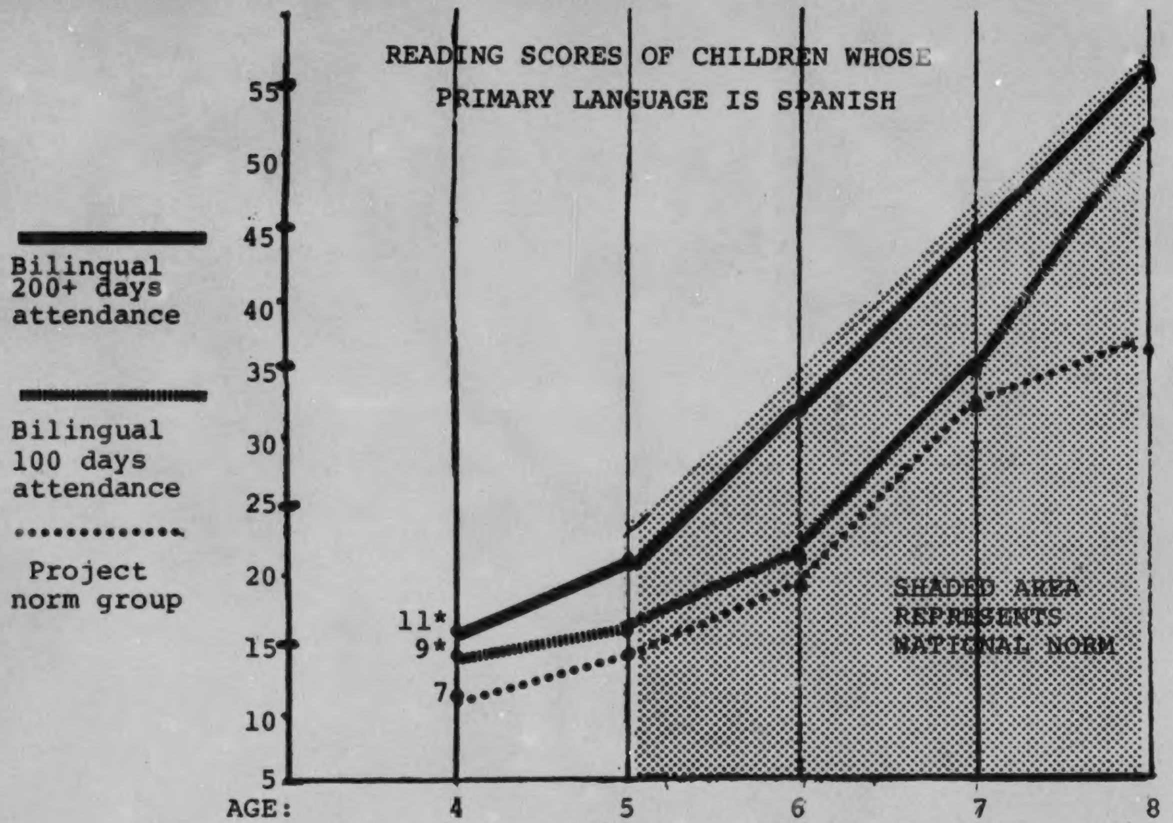
PROJECT RESULTS: Figure 7 which follow illustrates the effect of the IBI program on the English reading scores of children whose primary language is Spanish. The shaded area represents the national norms for this test at each age level. Line A represents the scores of the project norm group, i.e., the expected score by target group children without benefit of the bilingual program. As can be seen in the graph the project norm group's score are far below the national norms, and the gap widens as the children get older.

Children in the IBI program 100 days score higher at every age level than the project norm group. Children in the IBI program for 200 or more days have average scores higher than the 100 day test group, and much higher than the project norm group. The statistical detail for these scores is given in Table in the Technical Appendix. The superiority of the children in the bilingual program 200+ days over the project norm group is statistically significant beyond the .001 level in each age group.

At all age levels the score of children in the bilingual program is somewhat below national norms; however the average score comes closer to the national norm as the children get older. The mean standard scores for each group are reported under the graph in Figure 7. The national norm in standard scores would be 100 for each age level. As noted on the graph, the IBI children in the 200 day test group had a mean standard score of 95 at ages five and six, 97 at age seven, and 99.4 at age eight.

In terms of percentile scores the project norm group scores were at the 8th and 9th percentile in reference to the national norms for this test. The bilingual program children after 100 days averaged scores between the 14th and 19th percentile. After 200+ days, the scores of children ranged between the 37th percentile at age five and the 47th percentile at age eight.

Figure 8, which follows, and Table 9 in the Technical Appendix, present comparable data for children in the IBI program whose primary language is English. IBI accepts relatively few children who are English dominant and these almost entirely at the preschool or kindergarten level. For the ages and attendance groups in which there were a sufficient number of tests for analysis (a minimum of ten) the pattern is similar, only slightly higher than the corresponding scores for Spanish dominant children. The expected level of scores without the program, represented by the project norm group, is far below national norms; 19th percentile for age five and 25th percentile at age seven. Group mean scores are higher after 100 days in the IBI program; 39th percentile at age five and 30th percentile at age six. The IBI children with at least 200 days had the highest scores; 42nd percentile at age five and 55th percentile, e.g., above the national norms, by age six. The scores after 100 days were significantly higher (.05 level) than the project norm group. The superiority after 200 days was statistically significant beyond the .01 level.



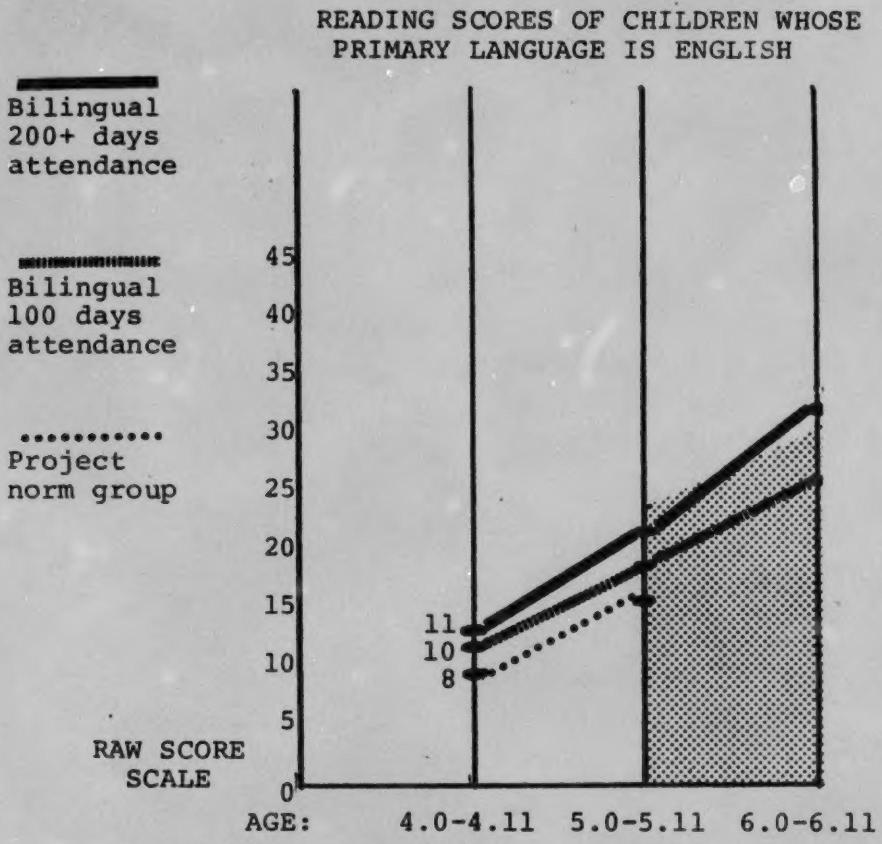
Mean	National Norm:	100.0	100.0	100.0	100.0
Standard	IBI 200+ day:	95.4*	95.2*	96.8*	99.4*
Scores	IBI 100 day:	84.2	83.7	86.9	88.7
	Project Norm:	79.1	80.1	79.2	79.8

*The superiority of this score over the project norm group of the same age is statistically significant beyond the .001 level. Detailed test scores analysis is shown in Table 9 in the Technical Appendix.

FIGURE 7.. MEAN RAW SCORES AND STANDARD SCORES OF IBI PROJECT CHILDREN BY AGE AND PERIOD OF ATTENDANCE ON THE READING SUBTEST OF THE WIDE RANGE ACHIEVEMENT TEST.

TO SUMMARIZE THE FINDINGS IN FIGURE 7:

1. PROJECT NORM GROUP SCORES INDICATE THAT WITHOUT THE BILINGUAL PROGRAM CHILDREN WHOSE PRIMARY LANGUAGE IS SPANISH WOULD BE EXPECTED TO HAVE READING SCORES IN ENGLISH FAR BELOW NATIONAL NORMS.
2. THE IBI CURRICULUM RESULTS IN HIGHER SCORES AT EVERY AGE LEVEL AFTER 100 DAYS, STILL HIGHER SCORES AFTER 200 DAYS, WITH THE SUPERIORITY AT 200 DAYS STATISTICALLY SIGNIFICANT BEYOND THE .001 LEVEL (POSSIBILITY OF CHANCE OCCURANCE LESS THAN 1 IN 1000).
3. AFTER 200 DAYS IN THE BILINGUAL PROGRAM, THE MEAN STANDARD SCORES OF CHILDREN ARE WITHIN THE 90-109 RANGE CONSIDERED AVERAGE BASED ON NATIONAL NORMS.


READING SCORES OF CHILDREN WHOSE PRIMARY LANGUAGE IS ENGLISH

Mean Standard Scores (Based on Norm of 100)	IBI 200 days:	97.6**	102.5
	IBI 100 days:	96.4*	92.3
	Proj. Norm:	87.3	(-)

**The superiority of this score over the project norm group of the same age is statistically significant at the .01 level. Detailed test scores analysis is shown in Table 9 in the Technical Appendix.

*Significant at .05 level.

(-) Less than 10 in group, too few for analysis.

FIGURE 8. RAW SCORES AND STANDARD SCORES OF IBI PROJECT CHILDREN BY AGE AND PERIODS OF ATTENDANCE ON THE READING SUBTEST OF THE WIDE RANGE ACHIEVEMENT TEST.

TO SUMMARIZE THE FINDINGS IN FIGURE 8:

1. THE PROJECT NORM GROUP SCORES FOR CHILDREN WHOSE PRIMARY LANGUAGE IS ENGLISH ARE IN THE LOW AVERAGE RANGE COMPARED TO THE NATIONAL NORMS OF THIS TEST.
2. AFTER 100 DAYS THE AVERAGE SCORES ARE HIGHER THAN THE NORM, HIGHER STILL AFTER 200 DAYS. THE SUPERIORITY AFTER EITHER 100 OR 200 DAYS IS STATISTICALLY SIGNIFICANT IN REFERENCE TO THE PROJECT NORM GROUP.
3. AFTER 200+ DAYS ATTENDANCE, CHILDREN AGE SIX HAVE A MEAN STANDARD SCORE OF 102.5 WHICH IS SLIGHTLY ABOVE THE NATIONAL MEAN SCORE OF 100.

4. As evident from Figure 8 and Figure 7 on the preceding page both children whose primary language is English and those whose primary language is Spanish appear to benefit from the IBI curriculum in improved reading skills.

GOAL 7. CHILDREN WILL GAIN READING SKILLS IN SPANISH.

THE NEED: The IBI program teaches reading in Spanish based on parents' wishes that children obtain the full benefit of their bilingual heritage through literacy in Spanish as well as English.

THE IBI CURRICULUM: IBI uses Aprendiendo a Leer reading series, published by Behavior Research Lab. in Palo Alto. This is a parallel reading program to the Sullivan Programmed Reading in English. It has consumable workbooks in which children can work independently at their own pace, checking their own work through the marginal answer column. The teacher moves from child to child introducing new sounds, asking comprehension questions, and hearing children read aloud as the accuracy of the child's work is checked. There are only six workbooks in the Spanish series (compared to 23 in English), since the authors feel children can master the basic decoding and word attack skills in Spanish much more easily than in English because the sound-symbol system is much more consistent than it is in English.

IBI developed its own Primer to teach the prereading skills and introduce a set of beginning sounds which the child can use to learn blending skills needed for working in the Aprendiendo a Leer reading series. The need to develop these curriculum materials delayed full implementation of a Spanish reading program in the IBI project until the 1977-78 program year. The IBI primer is called Comenzando a Leer. It is a direct instruction approach, taught from a teacher presentation book with the teacher modeling and requiring children to give group responses, then individual responses to check mastery. It is programmed with new material introduced gradually with continuous review of what has been learned before.

PROGRAM RESULTS: Building up a project norm group based on pretest scores of children entering at different ages requires time to build up the baseline data to numbers sufficient for statistical analysis. As there are no meaningful norms from an external group to use as a measure of expected progress by project children, the reading program in Spanish does not yet have sufficient test data for analysis.

GOAL 8. CHILDREN NEED TO LEARN MORE OF THEIR CULTURAL HERITAGE.

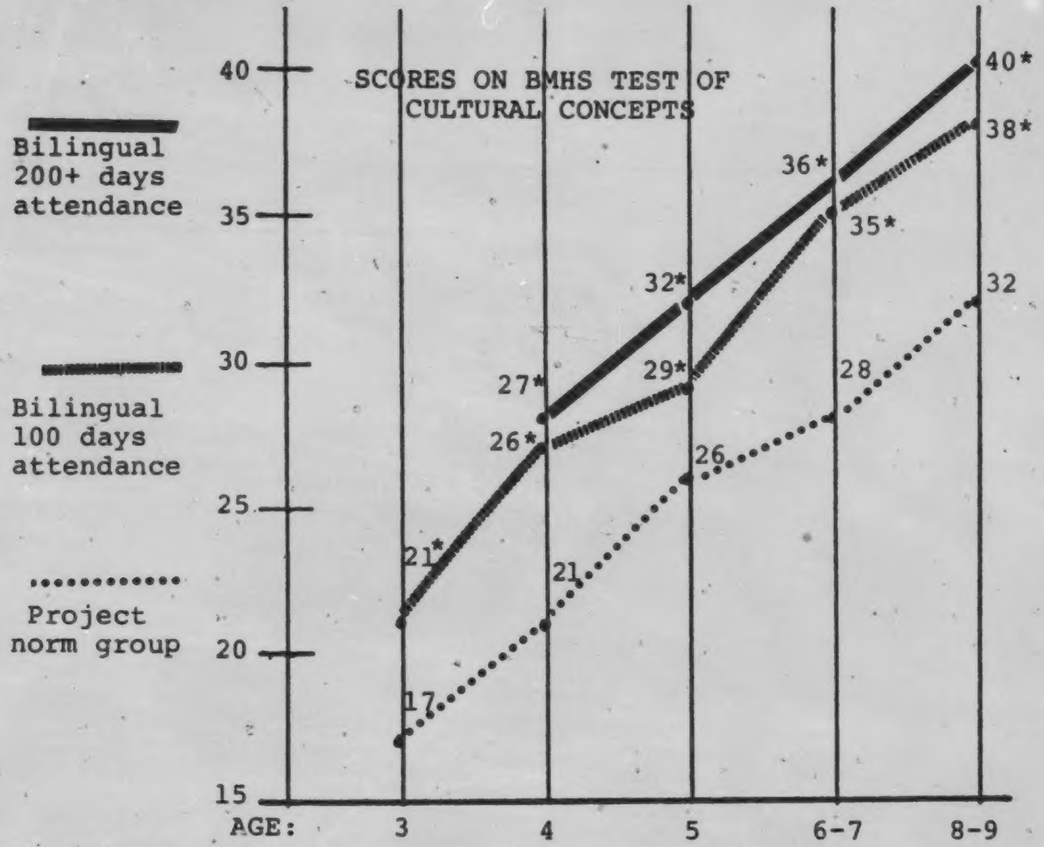
THE NEED: The need for this instruction is based on a philosophical position held by the families served by the program that having children appreciate a multicultural society is a useful educational goal.

THE IBI CURRICULUM: The daily schedule in an IBI program involves one or more periods of time in which children are free to select an activity of their choice. Teachers prepare materials and plan activities from which the child may choose, and at least two of the choices available each week will involve something related to "cultural heritage." In addition, once a week, or once every other week (depending upon available time as this is a released time or after school program for children of school age) an academic learning period is replaced by a teacher planned cultural heritage activity in which all children participate. The project has prepared a book as a reference source on activities related to the Mexican culture (available to other programs if they wish to purchase it). In addition it has prepared kits with materials and activity ideas related to many world cultures (Chinese New Year, Danish Christmas, etc.) which have not been reproduced for general distribution. Kits have also been prepared in reference to U. S. holidays and traditions. However, the use of this scheduled time is generally a matter of teacher choice and no particular content is mandated.

The IBI program uses adult paraprofessionals from the same cultural group as the children served as its teaching staff and considers this to be the main source of helping children have a sense of cultural identity and role models within their own cultures. Recognizing that the songs and dances, holiday traditions, etc. represent only the "trappings" of culture, IBI felt that since it was allocating time to familiarize children with these "trappings" it should measure whether there was any yield to the time spent. Available tests dealing with cultural knowledge seemed to be mostly geared to older children who approached cultural enrichment in a social studies sense--lessons about history, heroes, etc. For children **preschool** through third grade this seemed too abstract. The **project therefore** developed its own test (BMHS Test of Cultural Concepts). The test measures knowledge of U. S. and Mexican culture through clothing and food, songs, dances and games, and holidays which have particular meaning for young children. Detail on the test content, and validity and reliability data related to its use, is given in Appendix B.

PROJECT RESULTS: Figure 9 which follows, and Table 10 in the Technical Appendix, document the gains made by children in acquiring the knowledge of culture measured by this test.

The superiority of children tested after either 100 or 200+ days in the bilingual program over the project norm group (cumulative pretest scores) is statistically significant. Most of the gain appears within the first 100 days although at every age level there is continued gain so that the mean scores after 200 days are in all cases higher. The program, therefore, appears to produce a measurable gain in knowledge on cultural concepts.



*Scores given are correct answers out of 44-item test. The superiority of the bilingual 100 and 200+day attendance groups' scores over the project norm group of the same age is statistically significant beyond the .01 level. Statistical detail is shown in Table 10 in the Technical Appendix.

FIGURE 9. MEAN RAW SCORES ON THE BMHS TEST OF CULTURAL CONCEPTS BY AGE AND ATTENDANCE PERIOD.

TO SUMMARIZE THE FINDINGS IN FIGURE 9:

1. EACH PERIOD OF ATTENDANCE IN THE IBI PROGRAM PRODUCES A GREATER KNOWLEDGE OF CONCEPTS RELATED TO CHILDREN'S BICULTURAL BACKGROUND. MOST OF THE GAIN IS MADE WITHIN THE FIRST 100 DAYS OF PROJECT ATTENDANCE.

2. THE SUPERIORITY OF CHILDREN'S SCORES AFTER EITHER 100 OR 200 DAYS ATTENDANCE OVER THE SCORES OF CHILDREN TESTED BEFORE EXPOSURE TO THE PROGRAM IS STATISTICALLY SIGNIFICANT, AT EACH AGE LEVEL.

GOAL 9. CONTINUITY CHILDREN* WILL EXCEED COMPARISON GROUP.

THE NEED: The IBI program has a mobile component which was designed to provide continuity of educational instruction from one location to the next for children who must move during the school year because the parents follow the crops. Such moves make it difficult for migrant children to learn basic skills such as reading and math because the approach may be very different from one school to the next resulting in confusion. Each curriculum has a different organization so the child may miss concepts that are essential to later understanding. Many areas to which the children move do not have a large resident population who are Spanish speaking, and therefore are not prepared to offer bilingual instruction. The child has the anxiety involved in adjusting to a new school, new teachers, which impedes learning. Schools may choose not to "use up" expensive workbooks for a child expected to attend six to eight weeks, so utilize less convenient and less attractive dittoed materials. At each site it takes time for placement, assignment of materials, organizational tasks, tests and paperwork. All of these constitute the hardships of acquiring an education in a family following the crops which represent the need for an alternative approach.

THE IBI PROGRAM: One component of the IBI project is the "mobile component." In this component children in the south Texas town of La Grulla are surveyed to see what northern locations their families expect to move to during the migrant season. Adults from migrant families going to an area where a cluster of children will be going are then recruited as teachers in the mobile component. During the winter months the teachers are trained, and they provide instruction in the year-round center at the Texas site.

When the migration is about to begin, the staff "site coordinator" travels north and lines up facilities for the preschool age children if no local programs exist. If there are local programs either the site coordinator or another of the administrative staff works out a cooperative agreement whereby the mobile staff will be assigned to assist in the local program in return for released time during the morning to continue the bilingual instruction of the children being followed from Texas. Similar contacts are made with the schools. Often the cooperating northern school will assist by assigning all children in the IBI program to the same school location and working with teachers to allow released time so children may continue the bilingual instruction under the mobile teachers for part of their school day. Usually the schools arrange some space for this instruction as well. Sometimes the school-age children must be taught in the labor camp areas where the families live in the evening or after school.

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*Continuity children are project children in the mobile component of IBI who were enrolled both in Texas and in one of more northern locations under mobile teachers who moved with them from site to site.

Most of the teaching staff from the La Grulla site do relocate to the north for part of each year--some moving to more than one location in the north before returning to Texas. All of the training and administrative staff also relocates for part of the year--staggering the time they are gone in order to provide ongoing supervision of both the mobile component sites (which are scattered in the north) and the Texas program which continues for a small proportion of the children year-round.

The mobile component is experimentally small--normally involving 60 to 90 children and a dozen or so staff members. At the same time in some years it has succeeded in following as many as 75% of the children who leave La Grulla with their families following the crops. It provides the advantage of continued bilingual instruction for these children as an addition to the schooling they receive through the schools in migrant host communities. It enables them to follow the instructional sequence of the IBI curriculum wherever they left off (and special mastery tests keyed to all areas of the IBI curriculum are used to discover material they may have forgotten and need to review after an absence). Children have familiar teachers for at least part of the day to bridge the anxieties of changing schools. Through the IBI curriculum children follow one program approach in basic skills subjects for part of the day which makes it less important that the changing programs offered by the schools they attend may leave gaps and discontinuities.

The educational program uses the same materials and teaching methods described elsewhere in this evaluation.

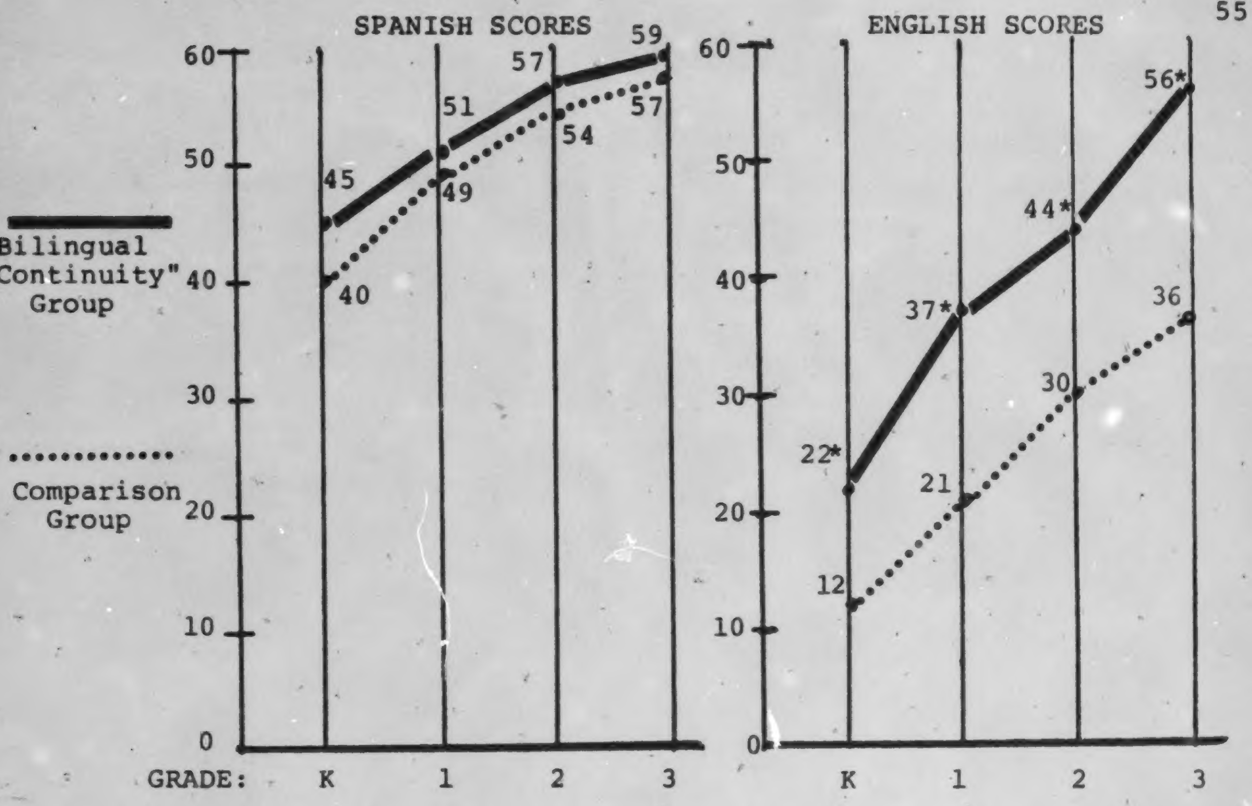
PROJECT RESULTS: The "continuity" group of children were Spanish dominant school-age children from the mobile component who had been enrolled in the program both in Texas and in one or more northern locations, and who had been in the IBI program for at least 200 days. The comparison group children were in kindergarten through third grade from a neighboring community to La Grulla, Texas. Children in the comparison group were Spanish dominant, had approximately the same socio-economic level as IBI project children, and came from families which migrated each year in order to do seasonal farm work. In making this special study in reference to the mobile component the factor of migration is held constant: only IBI project children who migrated were tested, only comparison group children who migrated were tested.

Figure 10 shows the vocabulary scores in Spanish and in English for the two groups. The IBI continuity children achieve a small superiority in Spanish at each grade level. In English the IBI continuity children achieve a great superiority over the comparison group with the gap widening at each grade level. By the third grade it will be observed that the mean score in English achieved by the children is only slightly below their score in Spanish.

The superiority of the IBI continuity group in English is statistically significant at every grade level over the scores of the comparison group. The superiority of the IBI continuity group in Spanish is not sufficient to be statistically significant. However, the fact that the children in the IBI bilingual program have maintained and improved their Spanish at the same time they have greatly improved their English is important in view of the controversy over "maintenance" vs. "transitional" bilingual programs. An underlying assumption in this controversy seems to be that maintaining Spanish skills must necessarily detract from the acquisition of English skills. The findings in the IBI project do not support this assumption.

Figure 11 compares the continuity and the comparison group in their math and reading scores. In every grade level in both math and reading the superiority of the IBI continuity group is statistically significant beyond the .001 level (e.g., the possibility that this much difference would occur by chance less than 1 in 1000).

The mean standard scores in math and reading are reported under the grade columns in the graph. These allow the comparison of both groups to national norms. On this test a mean of 100 is used and scores of from 90 to 109 represent an average range in reference to the national norm group. The migrant children in the comparison group have scores far below the average range in reading in English, and slightly below the average range in mathematics, a subject in which language is less of a factor. The IBI project children have scores within the average range in both subjects. In mathematics their scores run above the national mean in kindergarten and first grade, probably reflecting the participation of the children in the academic preschool program. Because of the preschool program children have been able to acquire English skills before reaching school age, and to maintain pace with other children from the majority culture and language in learning to read. As must be expected, the scores in reading in English of both groups closely parallels their scores in English vocabulary. These findings would seem to support the expansion of bilingual programs into the preschool years, so the child starts with a reasonable language facility and isn't playing catchup in the academic subjects that depend on English (e.g., English language arts).



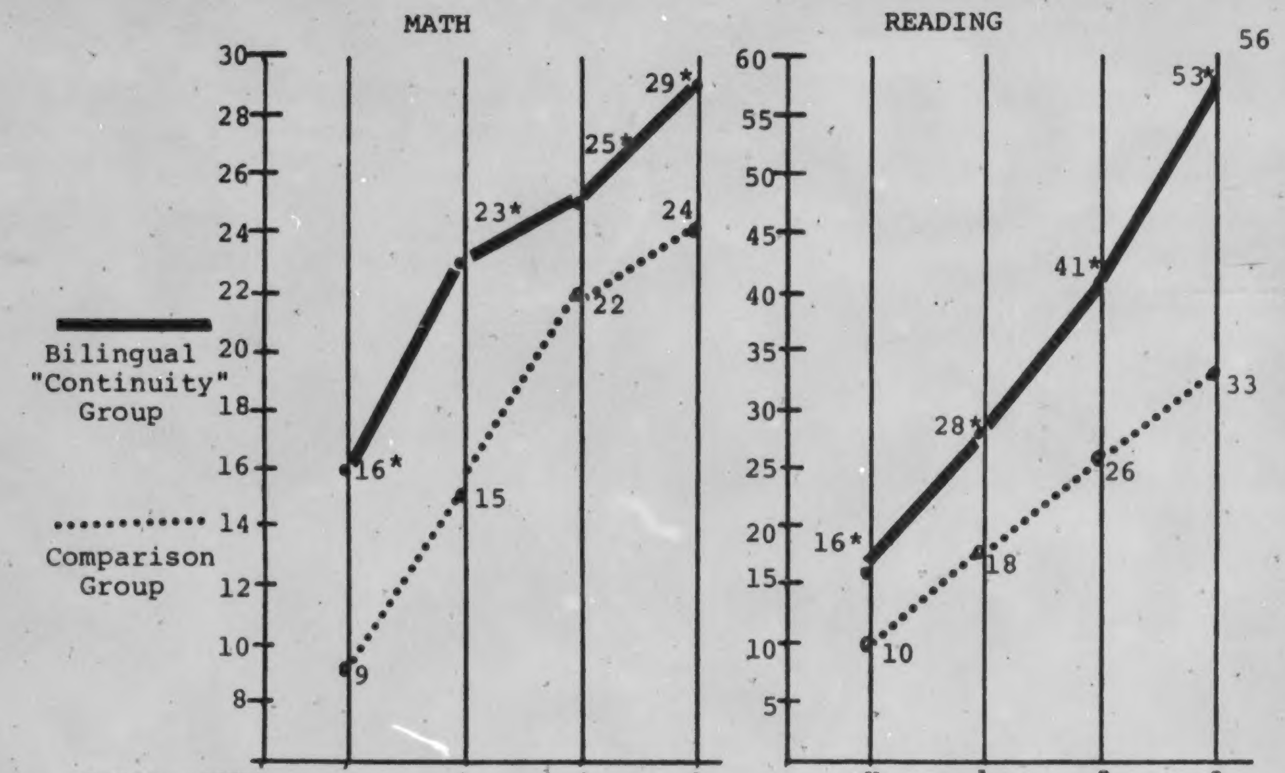
*The superiority of this score over the comparison group is significant beyond the .001 level. Statistical detail is shown in Table 11 in the Technical Appendix.

FIGURE 10. MEAN RAW SCORE ON PEABODY PICTURE VOCABULARY TEST, FORM B IN SPANISH AND FORM A IN ENGLISH FOR IBI CONTINUITY MIGRANT CHILDREN AND COMPARISON GROUP MIGRANT CHILDREN, BY GRADE LEVEL.

TO SUMMARIZE THE FINDINGS IN FIGURE 10:

1. IBI CONTINUITY GROUP CHILDREN HAVE HIGHER MEAN SCORES IN BOTH SPANISH AND IN ENGLISH THAN COMPARISON GROUP CHILDREN, AT EVERY GRADE LEVEL.

2. THE IBI GROUP SUPERIORITY IS STATISTICALLY SIGNIFICANT IN ENGLISH VOCABULARY; IT IS NOT STATISTICALLY SIGNIFICANT IN SPANISH. IT INDICATES, HOWEVER, THE IBI CHILDREN HAVE MAINTAINED AND IMPROVED THEIR SPANISH AT THE SAME TIME THAT THEY HAVE GREATLY IMPROVED THEIR ENGLISH SKILLS.



GRADE LEVEL:	K	1	2	3	K	1	2	3
Continuity Group:	104*	111*	98*	98*	90*	94*	95*	98*
Comparison Group:	77	88	89	86	76	77	79	78
Standard Scores								

*The superiority of this score over the comparison group of the same grade level is statistically significant beyond the .001 level. Statistical detail is shown in Table 12 in the Technical Appendix.

FIGURE 11. MEAN RAW SCORES AND STANDARD SCORES ON MATH AND READING SUBTESTS OF THE WIDE RANGE ACHIEVEMENT TEST, FOR IBI CONTINUITY GROUP CHILDREN AND COMPARISON GROUP, BY GRADE LEVEL.

TO SUMMARIZE THE FINDINGS IN FIGURE 11:

1. AT EVERY GRADE LEVEL THE IBI CONTINUITY GROUP IS SUPERIOR IN BOTH MATH AND READING TO THE COMPARISON GROUP CHILDREN. IN EVERY CASE THE SUPERIORITY IS LARGE ENOUGH TO BE STATISTICALLY AND EDUCATIONALLY SIGNIFICANT.
2. BASED ON A STANDARD SCORES MEAN OF 100, WITH 90 TO 109 CONSIDERED AN AVERAGE RANGE OF SCORES IN TERMS OF NATIONAL NORMS, THE SCORES OF THE CONTINUITY GROUP ARE WITHIN THE NORMAL RANGE AT EVERY GRADE LEVEL FOR BOTH MATH AND READING. MATH SCORES IN THE EARLY GRADES ARE ABOVE THE NATIONAL MEAN.
3. THE MEAN STANDARD SCORE IN READING INCREASES WITH EACH GRADE LEVEL, ROUGHLY PARALLELING THE GAINS IN ENGLISH SKILLS REPORTED IN FIGURE 10.

INSTRUCTIONAL COMPONENT

PROCESS GOAL 1.10. TEACHERS WILL FOLLOW APPROPRIATE SCHEDULES.

THE NEED: In order to meet instructional objectives, it is necessary to assure that all subject areas are included in the teaching program for at least a minimum period of instruction time.

PROCESS: IBI follows a schedule checklist indicating the curriculum areas that must be taught, minimum time periods, and requirements related to order to scheduling so that child choice activity period can be maximally effective in reinforcing effort made during academic learning periods. Resource trainers monitor this at each site, and assist in making changes if grouping needs to be different, building restrictions change, etc. The checklists are forwarded to the evaluator as documentation of this process being carried out.

FINDINGS: Resource trainers reported that schedules meeting minimum requirements were carried out at each site. Not all documentation was forwarded to the evaluator; none at all from one site, so this goal is reported as "met," but only partially documented.

PROCESS GOAL 1.11 TEACHERS WILL USE APPROVED CURRICULUM.

THE NEED: The achievement of instruction objectives requires utilization of the specified curriculum materials, or an approved substitute, for each academic area.

PROCESS: IBI utilized a weekly curriculum progress report form. This specified the end of week placement of each child in each curriculum area and is filled out by the teacher and sent to the evaluator who maintains a tracking system for each enrolled child. This report also describes activities in the cultural area where there is no presequenced curriculum. These reports document this process objective on use of approved curriculum. They are also used to trigger mastery testing, to give a placement for a child after a move, to monitor child progress and report to trainers; e.g., the detailed tracking of child progress is an essential management tool in the implementation of the program.

FINDINGS: There is documentation of the progress in the specified curriculum for each project child. The specified curriculum is being fully implemented at all sites.

PROCESS GOAL 1.12. TEACHERS WILL USE APPROVED TEACHING METHODS.

THE NEED: In addition to following the approved curriculum and schedule, IBI feels that instructional objectives will only be met if approved teaching methods are used.

PROCESS: The project utilizes positive reinforcement classroom management procedures. After the teacher completes the in-service training units on how to use these methods, the maintenance of these skills is monitored through use of monitoring instruments. These are based on actual observation of teaching; some are timed and all have a criteria for passage. If a monitoring unit is not passed, the trainer reviews whatever parts of the original training seem to be needed and does another monitoring observation until the teacher meets the criteria on the instrument.

FINDINGS: Trainers at all three sites have made regular use of monitoring training units, and over 80% of all teachers eligible for monitoring (e.g., with the program long enough to have completed the requisite training units) have passed one or more monitoring observations.

STAFF DEVELOPMENT COMPONENT

GOAL 2.1 TEACHERS WILL MASTER IN-SERVICE TRAINING UNITS.

THE NEED: In the IBI program the only teachers working directly with the children are trained paraprofessionals--parents and relatives of the children served.

There were special reasons for designing a program that could be taught effectively by previously untrained bilingual adults. One was the shortage of available bilingual certified staff in the northern states (two year-round sites are located in Connell and Moses Lake, Washington). The other was the design of the mobile component, which was to utilize the only consistent adults found in the life of the mobile migrant child (his family and relatives) as teachers in a program that would move, following the child. Previous attempts had been made to recruit certified bilingual teachers for such a mobile educational effort and this was almost entirely unsuccessful. The professional teachers were reluctant to move their own families during the school year. They did not like the housing shortages and life in general in the remote rural areas to which the migrants moved, and they were sufficiently in demand because of the general shortage of bilingual teachers that they didn't have to work under these trying conditions, and would not unless paid real bonus wages which made the entire effort unfeasible in terms of cost. Adult members of children's own families were willing to endure the hardships of the migration, and their concern for the children's education stemmed from their own experiences trying to acquire an education despite constant moving. This made them caring teachers, and with training most became very skillful teachers.

Since these adult bilingual paraprofessionals had limited academic background (high school or G.E.D. at best), and no previous experience in teaching, they needed intensive and very focused training to enable them to quickly acquire the skills of teaching.

It should not be noted that since IBI became part of the national diffusion network, a number of other school districts have adopted parts of the IBI program (curriculum and training). These districts are using the usual combinations of professional teachers and aides, and the training has been very much praised by the certified staff who have taken it. In other words, it is specific and thorough enough to use with an untrained parent or aide, but the professional staff have found it equally useful.

THE TRAINING PROCESS: All of the training units were developed by the IBI program, and have by now been extensively field tested and revised repeatedly. There are usually two to three for each curriculum area, plus general classroom management training. There is one "orientation" unit which hits the highlights of all the others and enables the new IBI teacher to begin teaching immediately with the "fine points" of teaching coming later through the in-service training in each area.

(In some short term migrant centers which have adopted the IBI program, this orientation unit has been useful because these programs do not last long enough for the full training program. The orientation unit section highlights the most important skills and the adoption sites have used the sections that go with whichever curriculum components they have adopted. IBI considers this an "adaptation" rather than an adoption; however careful monitoring of results in the first such site indicate the training and curriculum were effective even in this "quick and dirty" version.)

Each training unit begins with demonstration. (Imitation was found to be the most time effective way for teachers to acquire teaching techniques.) The discussion guides that go with the demonstration are programmed with feedback questions designed to check the understanding of the participants. A Trainer's Guide for each unit gives suggestions on how to demonstrate, and the answers to the feedback questions in the discussion guides used by the trainees.

(At other sites which have adopted the IBI curriculum and training, the initial training with demonstration is given at the adoption site by IBI staff. Subsequently IBI trains someone at the local site in how to take over this phase of the training for purpose of training replacement personnel.)

The second phase of the training is completion of classroom observation forms recording how the teacher trainees actually performed the teaching techniques. Feedback is given after observation. Usually two to three observations per teacher are required before all teaching skills can be consistently demonstrated. At that point a checklist is filled out listing the skills the teacher is able to demonstrate. The checklist states the criteria for considering the training to be passed.

FINDINGS: IBI set as a standard that the teachers should be able to complete and pass one training unit every two months (based on available trainer time, and taking into account the time needed to practice skills in between the observations). This goal was met at one Washington state site (5/6 teachers completed this much training). At the Texas site, which includes the mobile component, 10/13 teachers met the training schedule. At the other Washington state site none (0/8) of the teachers completed the number of training units needed to meet the project goal. Fortunately this site had a number of experienced staff carried over from earlier years so that the lack of new training in the current year has not been as critical to the operation of the center as it would have been with entirely new staff. This project goal was considered to be "partially met."

GOAL 2.2. STAFF WILL CONTINUE ACADEMIC TRAINING.

THE NEED: The bilingual adults hired as teachers for the IBI program usually have at most a high school education. About one/third have less than a high school or G.E.D. background when employed. As many prove to be gifted teachers, the project has attempted to provide an opportunity for continued academic work at the college level which could lead to full professional status.

ACADEMIC TRAINING PROCESS: The project manager and educational director have shared responsibility for obtaining arrangements with agencies offering G.E.D. courses, or colleges in the area of IBI sites, offering extension type classes that can be taken to the area where the programs are offered. In the past Columbia Basin College approved the course content presented by IBI and approved the instructors for the courses (IBI staff members) and issued credits. Under this program several staff members received their one year certificates and some came close to the two year degree status. In Texas a project bus took several staff members on an 80-mile round trip to take college extension courses. The colleges cooperated by changing the time schedules to allow teachers to complete the courses before the time of the annual migration north.

FINDINGS: The academic continuation program was not implemented in the last program year. Negotiations for a new academic program have been carried out, and some Washington state staff have attended a program under Title I sponsorship for college courses. Some G.E.D. classes were held at the Washington state sites. This effort has been considerably short of the project goal that 80% of full-time staff could participate in such continued training, and the goal is therefore reported as "partially met."

GOAL 2.3. TRAINING STAFF WILL RECEIVE TRAINING.

THE NEED: The IBI training materials and methods require specific orientation of training staff to develop necessary background and skills.

TRAINING APPROACH: IBI has developed two training units to orient a new trainer to the project curriculum and training materials, and to develop skills in demonstration, observing, and conferencing trainees. It has developed one monitoring unit which is used to review the knowledge and training skills of an experienced trainer to see if they are adequate in all curriculum areas.

The first trainer unit is a background unit to evaluate the trainer's knowledge of the rationale and content of all of the curriculum and training materials, and is evaluated with a quiz. The second training unit and the monitoring unit are performance instruments evaluating the trainer's ability to demonstrate teaching techniques, take observations (obtaining inter-observer reliability), and do effective conferencing. Each has a criterion performance level specified in the instrument.

FINDINGS: IBI had only one new trainer hired during the 1977-78 program. The trainer training units were carried out with this trainer. However, for reasons of health the trainer resigned before completion of the trainer training process. A replacement had not yet been hired at the end of the program year.

The experienced trainers were monitored. Reliability on the training instruments was obtained with all trainers one or more times during the year. Because the one new trainer did not pass the trainer units within the six month period specified in the project goal, this goal is reported "partially met."

PROCESS GOAL 2.4. STAFF PROVIDE APPROPRIATE TRAINING OPPORTUNITIES.

THE NEED: To meet the project's training goals, the resource trainers and staff trainers must provide in-service training throughout the year, and the Project Manager or Educational Director arrange college and G.E.D. opportunities.

PROCESS: The IBI resource trainers are responsible for developing training materials and orienting staff trainers in their usage. The trainers are required to provide in-service training and monitoring, and in the past have provided course work leading to academic credits. The Project Manager, assisted by the Educational Director and on-site staff, arranges G.E.D. courses and handles arrangements and paper work for college courses and credits.

FINDINGS: The resource trainers had a prolific year in revision and development of needed training materials--partly in response to the need to have these materials "dissemination ready" for the use of other school districts wanting to adopt parts of the IBI program for local use. The resource trainers also carried out internal project responsibilities for training of the new trainer and monitoring the skills of the experienced trainers. The trainers at two sites carried out the full program of in-service training. At the other site seven of the eight teachers received in-service training, but the schedule of training activities was less than the project goal. The project manager was unable to arrange the academic training opportunities at the college level, but assisted in working out cooperation with another program for some staff to take college work, and helped set up G.E.D. training opportunities for staff that needed it. This goal is therefore reported to have been "partially met."

PARENT AND COMMUNITY INVOLVEMENT COMPONENT

GOAL 3.1. FAMILIES AND COMMUNITY MEMBERS PARTICIPATE IN PROGRAM MANAGEMENT.

THE NEED: In order to maintain program operations to best meet the needs of the participants, and integrate the resources of the community, families and community members need to be involved in program decision making.

THE INVOLVEMENT PROCESS: There is an organized parent/community advisory group at each of the three IBI sites.

In Connell and Moses Lake, Washington, all the parents of children enrolled in the program are members. They, in turn, elect officers as well as official representatives of the community. Each group has written bylaws and meets approximately monthly throughout the year.

In Texas the parents' group chose to incorporate. Instead of officers they elect a five-member board made up of parents and members of the community, with the project educational director serving as its executive officer. Their purpose in incorporating as the "La Grulla Migrant Coop" was to have a group which could legally apply for grant funds for related programs. During the mobile phase when La Grulla residents have mostly all moved north to various locations doing seasonal farm work, if official business needs to be taken up, the educational director and/or site coordinator for the Texas site contacts board members by telephone and business is conducted in this manner.

In addition to the five-member board, however, the Texas site holds general meetings of parents in order to discuss center operations, proposals, etc. During the northern phase when mobile centers are operating at temporary sites the site-coordinator may hold a series of meetings at the labor camps or at the centers where IBI children are served.

In order for parents to have information on the project from which to make decisions all staff report to the parent groups. Each published evaluation is submitted to parent/ community advisory groups for review. The trainer and some teachers as well as the site coordinator usually attend all meetings to report on how the program is doing. Usually once or twice during the year some teachers will do a curriculum demonstration for the parents, and sometimes videotaped lessons are shown. The project manager is responsible for submitting outlines of plans that would go into proposals for advisory group discussion and review prior to submission of any funding proposal.

Parents in the IBI program have more than an advisory relationship to the program. A personnel committee of parents and staff screens and recommends teachers, cooks, and other support personnel to be hired. Although the board of the administering school district has the final authority on hiring, the personnel recommendations have always been honored so that in fact the parent committee has a primary role in hiring. The parent groups are able to earn rather substantial funds (several thousand dollars over the years) through voucher payment for volunteer services, and have sole authority over use of parents' funds. Parent groups discuss and approve proposals for funding. The different sites have embarked on a number of projects for benefit of members.

FINDINGS: The Connell and Moses Lake, Washington sites held monthly meetings throughout the year, except for the summer months of July and August. Connell held a number of extra meetings during the Spring months of 1978 because parents were involved in making decisions about the grounds around their new preschool center, and planning for money raising events with which to buy a fence. Grulla Texas held four parent meetings during the winter home base period, and four meetings during the migration period. As usual in the north it was necessary to hold separate meetings at different labor camps in order for parents to attend.

The following content analysis indicates that parents were active in decision making at each site in at least four of the five policy making areas specified in the project goal.

TABLE 1

CONTENT ANALYSIS OF ADVISORY COMMITTEE MINUTES

(a) Organization matters (voting for officers, meeting time, parent group activities, etc.)		
MOSES LAKE: 3/78 Elect officers. 10/77 Plan Thanksgiving and Christmas programs. 7/78 Plan for taking children to fair.	CONNELL: 2/78 Disc. replacement of vice president. 11/77 Plan for Christmas fiesta. 11/77 Plan for parents' time, use of pickups, etc. to move to new center.	TEXAS: 10/77 (Grulla) Report on replacement of Board member. 4/78 (Basin City, WA) Discuss helping members utilize clinic, employment offices.
(b) Review proposals		
MOSES LAKE: 10/77 Discuss and approve Title VII proposal. 3/78 Discuss and approve URRD prop.	CONNELL: 10/77 Discuss and approve Title VII proposal (Spanish and English). 3/78 Discuss and approve URRD proposal.	TEXAS: 10/77 Discuss and approve Title VII proposal.
(c) Personnal actions		
MOSES LAKE: No screening during program year. Site had held screening in 6/77 and accepted candidates for current and future vacancies. Staff was hired from this list.	CONNELL: 9/77 Screen candidates for cook position, hire one.	TEXAS: (at Grulla) 9/77 Three trainees selected.
(d) Discuss plans to obtain funds, or use parent funds		
MOSES LAKE: 6/78 Agree to use of funds for security windows, toys, sheets, blankets, aprons for children. 11/77 Plan for Christmas gifts to be bought.	CONNELL: 4/78 Plans for raising money for fence and landscaping. 5/78 Committees for dinner, money for fence. 6/25 Discuss parent donations for fund.	TEXAS: (at Grulla) 10/77 Discuss using parent funds for building.
(e) Discussion of educational program and evaluation of progress		
MOSES LAKE: 12/77 Discuss annual evaluation report, parent group president to respond in writing to evaluator. 3/77 Plan which parents will participate in annual evaluation visits.	CONNELL: 12/77 Discuss annual evaluation, president to respond. 6/78 Parents visit centers, submit evaluations.	TEXAS: (at Basin City) 4/78 Change morning opening time to 4 a.m. 5/78 (at Eltopia Camp) discuss time of bus service to program. 6/78 (at Basin City) discuss possibility of mobile center going to Oroville when families move.

GOAL 3.2. PARENTS PARTICIPATE IN PROGRAM EVALUATION.

THE NEED: In order for the program to remain responsive to the needs of the families it serves, parents need to have information about the program and provide feedback evaluation and suggestions to program staff.

THE INVOLVEMENT PROCESS: Parents are involved two ways in program evaluation. The published evaluations are sent to the chairman of each parent group and these are discussed at parent meetings.

During the year at each site a committee of parents is chosen to visit the program and receive an on-site report on progress and observe operations. After this visit each parent completes a written evaluation of the different curriculum areas being taught, making suggestions for change or giving approval. At Grulla, a team of experienced teachers make home visits to talk about the program and to invite parents individually to visit the program. During their visit the same team of teachers explains the program and parents are asked to take part in the activities of their child or children. At the end of the center visit the parent fills out the written evaluation form. Some parents who do not feel comfortable writing their comments gave oral evaluations on the different points to the teachers who wrote these comments for them on the evaluation form.

This method of soliciting parent evaluation was developed so that the parents would have specific information about the program in order to evaluate it. It was felt that in this way more specific suggestions would be made on all aspects of the program than would be obtained by asking for evaluation comments at a general parent meeting.

FINDINGS: The evaluator received written parent evaluations from parents at all sites. Some parents added personal letters primarily to praise parts of the program they felt were particularly helpful to their children. There were almost no suggestions for program change to come out of this process in the past year. It does seem to have been effective in giving parents a detailed familiarity with the program. The presidents of the parent/community advisory groups at the two Washington sites provided written responses to the program evaluation. The goal was met at all sites.

PROCESS GOAL 3.3. STAFF WILL REPORT TO PARENT/COMMUNITY GROUPS.

THE NEED: In order for the parent/community advisory board to participate in decision making, staff needs to keep them informed about the program through providing proposals and evaluations, and by having staff attend meetings, make reports, and maintain outreach contact in the community.

PROCESS: On-site staff (administrative, training and teachers) regularly attend parent/community advisory board meetings and periodically make presentations about various aspects of the program. The site coordinators or other assigned personnel contact parents and community members about meetings and program needs and children's progress. Prior to proposal writing a summary of plans highlighting any proposed changes is distributed (in Spanish and English) and discussed in both Spanish and in English at the meetings. Every project evaluation is mailed to the chairman of each advisory group.

FINDINGS: Minutes of parent meetings indicate that staff members attended each one. There are frequent summaries of reports that were made about program operations. Letters from the chairmen of parent groups document receipt and approval of project evaluation. In the judgment of the evaluator, there was a substantial effort made at every site to involve the parents and to obtain community participation in the project operation and management. This goal is considered met.

MATERIALS DEVELOPMENT COMPONENT

GOAL 4.1. STAFF WILL DEVELOP TRAINING UNITS FOR SPANISH READING CURRICULUM.

THE NEED: The IBI project has found that in order to adapt published curriculum materials for use by paraprofessional staff, that the procedures for presentation which are contained in teachers' manuals need to be simplified and demonstrated through curriculum specific training units. As the project was introducing its Spanish reading curriculum in the 1977-78 program year, the appropriate training instruments for these materials needed to be developed.

PROCESS: The Resource trainer drafts the training unit as a four-part unit: (1) training and discussion guide used in initial presentation; (2) Trainer's guide on how to demonstrate the teaching techniques, and keys to answers to the feedback questions included inthe discussion guide; (3) observation instrument; and (4) checklist with criteria for passage of the training. These materials must provide the teacher with understanding of the concepts to be presented and demonstrate useful teaching techniques for presenting lessons to children. The materials are field tested at one site by the resource trainer, and revised if indicated. The resource trainer then holds workshops to orient the trainers at all sites in use of the training materials.

FINDINGS: Because the Spanish reading materials were parallel to the reading curriculum in English, the Resource trainer revised the reading training units drawing examples from both Spanish and English materials. The same training, therefore, is used for the teaching of either English or Spanish reading. These materials have been edited and published and are dissemination ready for use by other programs as well as within the IBI project.

GOAL 4.2. STAFF WILL DEVELOP MASTERY TESTS GEARED TO SPANISH READING.

THE NEED: Because project children frequently miss school during relocation, the project needs curriculum specific testing materials to use for placement in the materials and for identifying concepts the child may have forgotten in an absence. The tests also help monitor child progress. From errors made by the children in the periodic testing, the trainer can detect aspects of the curriculum which the teachers may not be teaching well and provide specific assistance. The Spanish reading curriculum introduced in the 1977-78 program year required the development of a specific mastery test to fulfill these functions.

PROCESS: The staff assigned to develop the test reviews the curriculum selecting key concepts or a sampling of material covered. Test items are prepared and assembled into a test book which will be used by someone other than the child's teacher to check mastery. Score sheets and instructions for administering the test make up the final test package.

FINDINGS: The Spanish reading achievement test was developed and is in use in the IBI program being field tested. The goal was therefore met.

GOAL 4.3. STAFF WILL DEVELOP DESCRIPTIVE MATERIALS FOR DISSEMINATION.

THE NEED: The U. S. Office of Education brings out a publication entitled Educational Programs That Work. This document lists programs that have been found by the Joint Dissemination Review Panel of USOE to have "credible evidence" that they are successful in raising the achievement of children they serve. Programs which meet their criteria are "validated." The publication in which they are described is distributed widely among educational agencies in an effort to encourage other districts to find out more about proven educational practices and adopt those that fit their own situation. IBI was validated in 1973, although at that time the project title was "Taining Migrant Paraprofessionals in the Bilingual Mini Head Start." The project name was changed to Individualized Bilingual Instruction (IBI) because USOE felt a shorter, better descriptive title would be helpful to dissemination.

Because of efforts of USOE to draw attention to its validated project, IBI has received many many requests for information on every conceivable facet of the program. This goal was included for the 1977-78 program in an effort to develop materials that would describe the program which could be sent out in response to such inquiries.

PROCESS: The project director forwarded to the evaluator the file of inquiries and these were tabulated to find the types of information sought. From this an outline of proposed descriptive documents were made up and discussed among staff for suggested content. The evaluator was assigned writing responsibility with editing help from other staff.

FINDINGS: This goal was greatly expanded by the project's approval in 1977 as a developer/demonstrater project in the National Diffusion Network. It was necessary to produce a Level I awareness brochure--describing the program in general terms. Level II awareness materials were also produced, a series of brochures describing in some detail the components (various curriculum areas) which could be separately adopted by other districts. Because the program was selected as one of 21 projects which USOE wanted to recommend for special consideration by districts receiving Title I or Title I Migrant Grants, it agreed to participate in a series of regional conferences blanketing the United States, and to present the description of the program several times at each conference. This necessitated preparation of slides, overhead projector plates, and a descriptive presentation. This presentation was varied, and was also presented at several state meetings set up by State Facilitators, e.g., agencies with grants to disseminate information about successful educational practices in their state. The goal was met.

Also in the interest of dissemination, all of the evaluations have been put into the ERIC system, which has made them available through libraries. The number of ERIC publications about this program are:

ED133133
ED114222
ED116868
ED116871
ED116870
ED116876
ED116866
ED116869
ED134374
ED157642
ED152464
ED116875
ED116874
ED116873
ED116872

MANAGEMENT COMPONENT

GOAL 5.1. FOLLOWING CHILDREN AS THEY MOVE.

THE NEED: The IBI mobile component offers a unique interstate delivery system. Teachers relocate with the migrant families who move from one state to another seeking seasonal agricultural work. With each relocation children reenroll and the educational program continues. The need for such a delivery system stems for the assumption basic to this program that an effective effort to keep migrant children from falling behind in school must provide services in more than one location since migrant children are never able to receive a full school year in any one place. There is a need to monitor how well the project success in following children as they move in the migrant stream.

PROCESS: Anticipated travel patterns of families are checked durin the winter. Any replacement teachers to fill staff vacancies are recruited from adults of families known to be moving to an area where there are a cluster of children to be served. When migration begins, the site coordinator is responsible for finding teaching space in temporary locations in the north, and for contacting families who have moved, recruiting the children for reenrollment in the program. From the weekly progress reports filed by all teachers the evaluator maintains a "flight pattern" on children as they move from site to site.

FINDINGS: Eleven teachers from Texas relocated to the north and worked with children followed from Texas. There were an average of five children followed by each teacher. A number of other bilinigual migrant children were temporarily enrolled as time and space permitted at each site. This met the project's minimum goal, but was the project's least successful year in following children from the home base area.

GOAL 5.2. COORDINATING WITH EDUCATIONAL AGENCIES IN HOST COMMUNITIES

THE NEED: This program is unique in that it is interdistrict and interstate. In Washington state the two year round sites serve children drawn from three different school districts. The mobile component is in one school district in Texas, and operates temporary sites in several other school districts in the northern states to which it moves. Coordination with other educational agencies is therefore a critical factor to operating it successfully.

PROCESS: Contact is made with school officials at each site explaining the purpose of the program and its resources. During the regular school year the home base district in Texas allows children released time from their regular classes to go to rooms, also provided by the school, where the IBI teachers work with them in small groups for approximately an hour a day. When the project moves north cooperating schools have provided space and released children from regular classes to work with the IBI teacher. By contacting them before the children get to the school district they have sometimes gone further to be sure that Grulla children are assigned to the same school building so that the IBI teacher can work with them as a group instead of going from school to school with only one or two children per school as happened the first year. In several schools IBI teachers have been asked to teach additional children felt by the school district to be in special need of bilingual tutoring, and has accommodated as staff time permitted after serving the base group it was following. At the Washington state sites, the schools have permitted children to leave early in the afternoon to go to the IBI center in which preschool children were served in order to continue the bilingual program. The time they are in the program is therefore partly school time and partly after school. Kindergarten children are usually served at the preschool center in the "other half day" when they are not in the school program and are bussed either by the school or IBI. If special migrant summer school programs are being held the children enroll in these, and again have the IBI program as a supplemental program on released time or non school time. In some cases the IBI teachers are assigned to work for the program in the school district except for an hour or so during which they are allowed to work with all children in that program that are enrolled in the IBI curriculum.

If there are preschool programs operating at the temporary sites, again IBI children will usually be enrolled in the local program and IBI staff will work with them on a release time basis. IBI operates a preschool center (using Head Start or day care operating funds) at each of the three year-round program sites.

FINDINGS: This procedure sounds enormously complicated but has in fact worked very smoothly. School districts approached have all felt the program was valuable and cooperated with it. The side benefits have been numerous in that it has given exposure to the IBI teaching methods and curriculum at every school it has touched, and many have asked for workshops, ordered materials for use in regular classrooms, etc. The goal was met at every site during this program year.

GOAL 5.3. STAFF WILL OBTAIN MULTIPLE FUNDING SOURCES TO SUPPORT PROGRAM.

THE NEED: Because the program is operated on an interdistrict and interstate basis, the entire cost must come from grant sources unlike most programs operating within one school district where at least basic operating costs come from a tax base. Other funding sources have made possible the operation of preschool centers, paying building costs transportation, food, and salaries of most of the teachers. The bilingual grant has then provided curriculum related costs as it does in other bilingual programs, e.g., costs of training staff, some additional classroom staff, special curriculum materials, and the overhead costs of administration and evaluation.

The task of finding the companion resources to carry out this program true to its original concept has been especially difficult because of the unique program design--e.g., an interstate program following children, starting during the preschool years and continuing through the early grades. This is because most state or federal money channeled through states is restricted to expenditure within the state which granted the funds. Likewise the Head Start and day care money used to pay costs in the preschool program cannot be spent for school-age children, etc. Despite these obstacles a large number of funding sources have been pulled together to fund all aspects of the program in the different locations it must operate. It has made IBI also a demonstration project in use of "multiple funding" (a case study was written up on this aspect of the program by a consulting firm hired by USOE).

PROCESS: The process is essentially the same as for obtaining the bilingual grant; establishing the need and the potential of the proposed program to meet this need, defining a budget within the limitations of budgetary authority of the granting agency, and subsequently evaluating program and use of funds to demonstrate that the program is successfully carrying out effective education for children as projected in the project goals.

FINDINGS: The cornerstone grant for IBI is from Title VII, Bilingual education, USOE. This pays most of the cost of administration and evaluation, training, and curriculum development costs, some of the costs of curriculum materials used and a limited number of classroom personnel. This goal was met inasmuch as project administration obtained other sources of support as follows:

Washington State Office of Public Instruction: Urban, Rural, Racial, and Disadvantaged categorical funding for bilingual education. Used primarily for costs of the school-age program staffing in Washington state.

Washington State Department of Human Resources, Title XX day care funding. Used primarily for the costs of operating the preschool centers in Washington state.

Head Start--Indian and Migrant Program Division, through the Texas Migrant Council. Used primarily for the costs of operating the preschool center in Texas.

Washington State, Head Start matching state funds. Used primarily for the costs associated with the mobile component Head Start children while they are in Washington state.

USOE Developer/Demonstrater Grant. Used to pay costs of dissemination of the IBI program. Funds training and staff support costs offered to adoption sites, and preparation and distribution of literature about program, staff to make presentations at awareness sessions, etc.

Title I Migrant, ESEA money channeled through State of Washington. Used for temporary facilities at Basin City for the mobile component children in Washington state for work season, and for the preschool center at Connell. Also IBI staff members have continued academic work through a staff development project administered by another agency utilizing Title I funding.

Bilingual Mini Schools, a private non-profit agency. Paid costs of developing the Language I curriculum in Spanish for the IBI program, and has assisted in production and distribution costs of bilingual products developed by IBI now being sold at cost to other districts adopting the IBI program.

USDA food support.

CETA personnel at each year-round preschool center.

ESEA Handicapped funding. A few children with special handicaps are enrolled at the preschool centers in Washington state and are supported by handicapped funds.

In addition the project has utilized technical support provided by a number of agencies:

Both the Bilingual Resource Centers (University of Washington and BETAC at Tacoma); TAB and the NETWORK, consulting agencies offering services involved in dissemination; Office of Superintendent of Public Instruction Bilingual Section--consultation, and funds to bring interested districts to awareness sessions at the IBI site; the Washington State Facilitators staff, who have provided assistance in developing materials for dissemination and advice on how to carry out the D/D responsibilities.

SUMMARY

The project's instructional goals were that project children, after 200 days attendance, would show superiority to the project norm group that was statistically significant at the .05 level or higher. The conclusions as to the attainment of the project goals for instruction, and in other areas are summarized below.

TABLE 2. STATUS OF PROJECT GOALS

INSTRUCTION	
1.1 Preschool Concepts.	Goal met.
1.2 Handwriting.	Goal met.
1.3 Learning Spanish.	Goal met, except at age six.
1.4 Learning English.	Goal met.
1.5 Math.	Goal met.
1.6 Reading in English.	Goal met.
1.7 Reading in Spanish.	Not enough data for analysis yet.
1.8 Cultural Concepts.	Goal met.
1.9 Continuity exceed comparison children, math and reading.	Goal met.
PROCESS GOALS	
1.10 Maintain appropriate schedules.	Met, but documentation partly lacking.
1.11 Use of approved curriculum.	Goal met.
1.12 Use of approved teaching methods.	Goal met.
STAFF DEVELOPMENT	
2.1 In-service Training schedule maintained.	Goal met at two sites, partially met at third.
2.2 Continue Academic Training.	Goal partially met.
2.3 Trainers trained.	Goal partially met.
PROCESS GOALS	
2.4 Staff provide appropriate training opportunities.	Goal partially met.
PARENT AND COMMUNITY INVOLVEMENT COMPONENT	
3.1 Advisory groups do decision making.	Goal met.
3.2 Advisory groups take part in evaluation.	Goal met.
PROCESS GOALS	
3.3 Staff reports to advisory groups.	Goal met.
MATERIALS DEVELOPMENT COMPONENT	
4.1 Training for Spanish reading program developed.	Goal met.
4.2 Mastery test for Spanish reading developed.	Goal met.
4.3 Dissemination materials developed.	Goal met.

TABLE 2. (continued)

MANAGEMENT COMPONENT	
5.1 Mobile component tracks children to north.	Goal met.
5.2 Coordination with other educational agencies.	Goal met.
5.3 Obtain multiple funding resources.	Goal met.

TECHNICAL APPENDIX A

The main body of the final report was written for the general reader, and for clarity avoided technical detail. Since information on procedures for testing and data collection and explanatory footnotes for the analysis of test scores in the instructional component is of importance to a technical reader, that information has been reported here.

TESTING AND DATA COLLECTION AND ANALYSIS PROCEDURES

Training of Testing Personnel

Independent testers are used at each site--e.g., instructional or supervisory staff do not do testing. All testers are paraprofessional bilingual Mexican-Americans. Since more than 95% of the children served are Mexican-American, this testing staff has cultural identity for the overwhelming majority of children being tested.

Each tester is individually trained on each instrument and must demonstrate appropriate procedures in the testing of at least two children, under observation, as part of the training. Subsequent monitoring visits review testing procedures annually. Training and monitoring of testers is done by the evaluator and/or the resource trainer. Experienced testers are also used to assist in training new testers.

Testing Schedule

All children are pretested before attending the program for 30 days--in practice as soon as possible after their initial enrollment. This pretesting includes all of the instruments used in the evaluation appropriate to children of their age. It also includes the project achievement tests which are used to help determine initial placement of children in project materials. The IBI program serves children continuously over the 12 months of the year. Since new children can and do enroll in the program every month during the year, pretests are also given during every month throughout the year.

Repeat testing on standardized test instruments is done after an individual child has attended for a period of 100 days, i.e., the child is tested at 100, 200, 300, etc., days. Attendance data are kept individually for each child and at the end of each month a list is made of every child who that month passed a testing interval in his attendance. This list is forwarded to the tester at each site who then administers the appropriate tests for that child. Every month some children at each center reach a testing point in their program attendance, so posttests are also given during every month throughout the year. Table 3 shows the statistics of the distribution of testing throughout the year for two of the project tests. The difference in total number of tests is because the PPVT has been in use by the project longer than the WRAT and more tests have been accumulated. These data indicate that the testing has been fairly evenly distributed throughout the year, and that the time of testing distribution is parallel for the test analysis groups utilized.

TABLE 3. Distribution Statistics on Month of Testing

	Peabody Picture Vocabulary Test				Wide Range Achievement Test			
Test Group	Number	Median	Mean	St.Dev.	Number	Median	Mean	St.Dev.
IBI Norm	887	5.80	5.94	3.89	679	5.89	5.95	3.90
200+ days	694	5.94	6.41	3.49	506	5.17	5.94	3.65

This testing schedule is more complicated than the usual evaluation procedure of doing mass testing at two calendar points. It was devised because of the unique requirements of evaluating a migrant population who have spotty attendance and who come and go at different times during the year. When the Texas Education Agency reports on child progress between tests administered in October and other tests administered in April of the school year it is not uncommon to have both pre- and posttests on less than 50% of the children enrolled in the program. Some children are there for pretests but leave before posttests are given. Other children come too late for pretests but are there at the posttesting dates. Some children enter late and leave early and aren't there for either testing point. This is a very common pattern in the evaluation of migrant programs--test information presented that represents a very unsatisfactory percentage of the project group it is meant to evaluate.

Another problem encountered in use of calendar date testing with a migrant population results from their uneven attendance patterns. Of two children tested on the same date in April, it would not be at all uncommon for one to have attended 50 days total prior to that testing point, another child to have attended 90 days. This puts the evaluator in the position of comparing child progress between tests which represent two very different amounts of exposure to the program being evaluated.

By testing based on individual attendance records, each of the posttests used in this evaluation represent a known amount of project intervention. At evaluation points the accumulated tests are then subgrouped by age and the period of attendance at the time of testing for purposes of analysis.

Selection of Tests

The IBI program selected the Peabody Picture Vocabulary Test, The Cooperative Preschool Inventory, and the Wide Range Achievement Test in part because these nationally standardized test instruments were among those most widely used by USOE in educational research and evaluation. The Cooperative Preschool Inventory was specifically developed for a measurement of the effects of Head Start programs and was utilized in many evaluative efforts measuring the impact of this nation-wide program of preschool education. The Peabody Picture Vocabulary Test similarly has been widely used in research on preschool programs. The Wide Range Achievement Test was one of two standardized achievement tests utilized in the massive Follow Through studies.

In order to use the tests, however, it was necessary to translate sections into Spanish. Tests are individually administered in the IBI program because of attendance cycle testing--this affects the math portion of the WRAT which was standardized under group administration. None of the tests was normed with a group even close to the IBI composition as to ethnicity or language use. For all of these reasons, the basic evaluation design has been kept internal to the project. The goals are all stated in terms of the project norm group, which is matched by ethnicity and language use to the project attendance groups. The language and circumstances for test administration are held constant in the testing of these two groups--indeed the testers are the same. The references, where made, to national norms are added so that there is some external interpretive power to the data. But all of these reservations about the application of the national norms restricts the interpretation of the data. However, this would be true of any bilingual program.

Analysis Procedures

The project norm group is used as a measure of the probable achievement level of project children without benefit of the program. When a child enrolls in the program he is pretested. If the pretest was given before the child had attended the program for as long as 30 days, it is put into the project norm group for children at that age level. The project has an enrollment policy which permits children to start the program at different ages, e.g., some start when they are three, others when they are four, others at five, or six. By accumulating pretests the project has been able to develop its norm group for all ages on all tests. The size of the norm group is increasing constantly as new pretests are accumulated.

In the past all evaluations have used a norm group obtained as described in the previous paragraph. As of 1977, the norm group for the Peabody Picture Vocabulary Test and for Wide Range Achievement Test was expanded to include the tests of children from a neighboring town to La Grulla, Texas. These children had been tested for the previous three years to provide a comparison group of mobile migrant children to compare to the children in just our mobile component using the two tests mentioned, the PPVT and WRAT. The reason for testing a comparison group instead of just using the project norm group for this special study (see instructional goal nine) is that the project norm group includes pretest scores on some children from permanent sites who do not migrate. In the special study we wanted to hold the factor of migration constant: only project children who migrated were tested, only comparison group children who migrated were tested.

The community where comparison group tests were given and La Grulla have about the same socioeconomic level--most families earn their yearly income from the migration period doing seasonal farm work. Both communities are Spanish dominant, located on the Rio Grande River where television stations beam in Spanish language programs, many radio stations are in Spanish, the usual language of casual conversation in town or school would be Spanish. As a further check on the comparability of the two population groups, statistical analysis was done for two years in a row comparing the mean test scores by grade level of the comparison group and the pretest scores of children at the same level in the project norm group. No significant differences were found. This was interpreted to mean that the children from the neighboring town were, in fact, the same population group as project children and their scores are like those of the children pretested for this program.

Most pretest scores for children in this project were at lower age levels (three, four, five) since the project attempts to get children started as young as possible. Therefore, the addition of scores from the comparison group to the project norm group enlarged the size of the norm group at the school age level where is has been the smallest. Having a larger norm group at these upper ages allows greater stability for statistical analysis.

The project evaluation design calls for comparison of the mean scores of project children posttested after 100 or 200 days to children in the project norm group of the same age. A t-test of statistical significance is run between the project posttest attendance groups and the project norm group of the same age. Statistical analysis is only done when subgroups to be compared have a minimum size of ten.

For this evaluation all tests data were put onto computer cards and the t-test analysis was done using the SPSS computer package. The readout using this computer analysis gives the t-value using separate or pooled variances. If a significant difference existed in the two variances the separate variance t was reported; if the two variances were not significantly different the pooled variance t was reported in the tables of detailed project findings which follows in this technical appendix.

Most objectives are based on comparison of the children with over 200 days attendance and the project norm group. Because it is difficult for a child to accumulate 200 days of attendance all at the same age level, there is almost complete independence of the two groups used in the analysis. Children with 200 days at age four will more than likely have started the program at age three, for example. They will be compared to the pretest scores of other project children who started the program at age four.

A very small percentage of the children have both pretest and posttest scores at the same age level. Analysis was therefore done including and excluding this small overlap group. The conclusion was that any bias created by this lack of complete independence of groups acted against the project in reducing the likelihood of a finding of significance.

The test analysis tables report long term program effect through the cumulative analysis, e.g., all tests through April 1978 which was used as the cut-off date for this evaluation. The current year program data would be posttests given in the period since the last analysis, e.g., May, 1977 through April, 1978. The cumulative norm group is used for tests of significance of difference between means for both long term cumulative and current year analysis groups. The t-value reported in each table is between the posttest attendance group, and the project norm group of the same age category.

To maintain a high level of accuracy in handling of test data the following precautions are taken. Each tester scores tests she administers. All tests are checked and rescored upon receipt. After preparation of the computer cards a readout is obtained and two persons recheck the accuracy before the decks are used. After analysis has been done, the N's of subgroups are rechecked against the project data entry records.

The project has employed independent evaluation specialists who have reexamined all analysis procedures and validated claims. The evaluation division of Northwest Educational Research Laboratories in Portland performed this evaluation review and audit through 1974 and Technical Assistance Services of Seattle through 1978.

STATISTICAL DETAIL OF TEST ANALYSIS FOR INSTRUCTIONAL COMPONENT

1.1 PRESCHOOL CONCEPTS

TABLE 4. Cooperative Preschool Inventory Test Scores
Cumulative Analysis

Age and Attendance	Number	Mean	St. Dev.	(w/norm) t-value	2-tail prob.	Nat'l Percentile
AGE 3.0-3.11						
IBI norm	200	10.060	7.764			30th
100 days	77	24.571	7.397	5.36	0.000	53rd
200+ days	17	29.941	6.189	5.62	0.000	69th
AGE 4.0-4.11						
IBI norm	126	29.984	10.836			35th
100 days	152	34.112	8.444	3.49	0.001	50th
200+ days	160	39.375	8.832	7.88	0.000	67th
AGE 5.0-5.5						
IBI norm	35	37.400	9.233			43rd
100 days	46	43.348	10.102	2.72	0.008	66th
200+ days	123	47.260	7.274	6.65	0.000	78th
		Current Year Analysis				
AGE 3.0-3.11						
100 days	13	25.462	6.839	2.90	0.004	53rd
200+ days	4	(too few for analysis)				
AGE 4.0-4.11						
100 days	41	32.000	9.187	1.07	0.285	41st
200+ days	33	38.606	7.677	5.23	0.000	67th
AGE 5.0-5.5						
100 days	12	45.250	7.362	2.66	0.011	72nd
200+ days	31	49.323	6.327	6.18	0.000	85th

NOTES ON ANALYSIS:
Cumulative Analysis includes all tests 1973 through 4/78.
Current Year Analysis includes tests given between 5/77 and 4/78.
The t-value compares the means of the posttest attendance groups to the IBI norm group in the cumulative analysis.
Age 4.0-4.11 percentiles based on national norm for 4.6-4.11 age group.

1.2 HANDWRITING

TABLE 5. Wide Range Achievement Test, Spelling Subtest Scores

Cumulative Analysis

Age and Attendance	Number	Mean	St. Dev.	t-value	2-tail prob.
AGE 3.0-3.11	183	0.853	1.320		
100 days	74	2.560	1.902	7.10	0.000
200+ days	12	4.417	2.906	4.22	0.001
AGE 4.0-4.11					
IBI Norm	134	2.963	2.880		
100 days	155	5.929	4.082	7.21	0.000
200+ days	128	0.234	5.134	12.12	0.000
AGE 5.0-5.11					
IBI Norm	102	7.529	4.516		
100 days	95	11.368	5.155	5.57	0.000
200+ days	176	15.097	4.191	14.10	0.000

Current Year Analysis

Age and Attendance	Number	Mean	St. Dev.	t-value	2-tail prob.
AGE 3.0-3.11					
100 days	12	2.167	1.642	3.29	0.001
200+ days	4	(too few for analysis)			
AGE 4.0=4.11					
100 days	39	5.436	4.291	3.38	0.001
200+ days	33	9.091	5.615	6.08	0.000
AGE 5.0-5.11					
100 days	17	13.059	5.250	4.57	0.001
200+ days	57	14.860	4.206	7.28	0.000

NOTES ON ANALYSIS:
Cumulative Analysis includes all tests 1973 through 4/78.
Current Year Analysis includes all tests given 5/77 through 5/78.
The t-value compares the means of the posttest attendance group to the IBI norm group in the cumulative analysis.

1.3 SPANISH VOCABULARY

TABLE 6. Peabody Picture Vocabulary Test Scores, Form B in Spanish

Children Whose Primary Language is Spanish

Age and Attendance	Number	Mean	St. Dev.	t-value*	2-tail prob.
AGE 3.0-3.11					
IBI norm	221	19.950	8.337		
100 days	81	26.000	8.868	5.52	0.000
200+ days	15	28.267	6.984	4.39	0.001
AGE 4.0-4.11					
IBI norm	132	28.402	8.954		
100 days	145	31.214	9.023	2.60	0.10
200+ days	134	34.090	8.075	5.44	0.00
AGE 5.0-5.11					
IBI norm	98	36.735	9.390		
100 days	76	40.632	9.005	2.76	0.006
200+ days	176	40.910	7.781	3.75	0.000
AGE 6.0-6.11					
IBI norm	66	46.742	10.164		
100 days	28	43.393	9.005	-1.47	0.145
200+ days	108	46.639	8.111	-0.07	0.944
Children Whose Primary Language is English					
AGE 3.0-3.11					
IBI norm	54	6.091	6.331		
100 days	30	10.000	6.486	2.69	0.009
200+ days	5	(too few for analysis)			
AGE 4.0-4.11					
IBI norm	61	8.148	10.076		
100 days	43	14.279	11.724	2.86	0.005
200+ days	44	14.659	9.829	3.30	0.001
AGE 5.0-5.11					
IBI norm	26	11.885	11.687		
100 days	33	14.970	14.668	0.88	0.385
200+ days	62	18.984	12.517	2.47	0.015
AGE 6.0-6.11					
IBI norm	13	17.077	17.380		
100 days	11	25.000	18.836	1.07	0.296
200+ days	27	24.482	16.568	1.30	0.200

*The t-value compares the means of the posttest attendance groups to the project norm group of the same age and language classification.

TABLE 7. PEABODY PICTURE VOCABULARY TEST SCORES IN ENGLISH, FORM A

Cumulative Analysis

Test Group: Children Whose Primary Language is Spanish

Age and Attendance	Number	Mean	St. Dev.	t-value	2-tail prob.
AGE 3.0-3.11					
IBI norm	221	6.448	4.211		
100 days	82	10.866	6.478	5.74	0.000
200+ days	15	16.267	8.598	4.39	0.001
AGE 4.0-4.11					
IBI norm	132	9.879	7.185		
100 days	145	14.255	8.075	4.75	0.000
200+ days	134	20.425	12.422	8.49	0.000
AGE 5.0-5.11					
IBI norm	98	12.398	9.585		
100 days	76	20.145	13.637	4.21	0.000
200+ days	178	27.292	15.220	9.95	0.000
AGE 6.0-6.11					
IBI norm	66	17.682	11.911		
100 days	28	28.000	14.684	3.58	0.001
200+ days	108	37.583	15.351	9.56	0.000
AGE 7.0-7.11					
IBI norm	67	27.896	15.818		
100 days	6	33.333	20.520	(too few for analysis)	
200+ days	52	42.885	12.502	5.61	0.000
AGE 8.0-8.11					
IBI norm	46	33.261	16.686		
100 days	3	44.333	11.590	(too few for analysis)	
200+ days	37	55.081	9.722	7.44	0.000

Current Year Analysis*

Age and Attendance	Number	Mean	St. Dev.	t-value	2-tail prob.
AGE 3.0-3.11					
100 days	10	13.700	8.908	2.56	0.031
AGE 4.0-4.11					
100 days	35	12.657	5.841	2.11	0.036
200+ days	28	21.500	14.688	4.08	0.000
AGE 5.0-5.11					
100 days	13	23.615	14.385	2.73	0.017
200+ days	42	26.310	15.371	5.43	0.000

TABLE 7. (continued)

AGE 6.0-6.11					
200+ days	15	40.447	14.845	6.52	0.000
AGE 7.0-7.11					
200+ days	20	43.400	13.100	4.73	0.000
AGE 8.0-8.11					
200+ days	15	58.467	10.246	6.98	0.000

*Too few for current year analysis in 200+ days at age 3, and 100 day groups at ages 6, 7, and 8.

1.5 MATH SKILLS

TABLE 8. WIDE RANGE ACHIEVEMENT TEST, MATH SUBTEST SCORES

Cumulative Analysis

Age and Attendance	Number	Mean St. Score	Nat'l %ile	Raw Sc. Mean	St. Dev.	t-value	2-tail prob.
AGE 3							
IBI norm	183	--	--	2.929	2.046		
100 days	74	--	--	5.851	2.713	8.35	0.000
200+ days	12	--	--	7.250	3.361	4.40	0.001
AGE 4							
IBI norm	134	--	--	4.754	2.895		
100 days	155	--	--	8.439	3.754	9.41	0.000
200+ days	128	--	--	10.422	3.456	14.36	0.000
AGE 5							
IBI norm	102	80.461	9th	8.804	4.115		
100 days	95	94.674	37th	12.295	4.368	5.78	0.000
200+ days	176	104.591	63rd	14.972	3.779	12.69	0.000
AGE 6							
IBI norm	74	86.811	19th	13.446	4.852		
100 days	44	96.591	42nd	16.500	5.028	3.26	0.001
200+ days	92	107.348	68th	19.250	4.510	7.97	0.000
AGE 7							
IBI norm	79	86.924	19th	19.127	4.876		
100 days	24	20.167	30th	20.167	5.079	0.91	0.367
200+ days	51	101.275	53rd	24.412	3.093	7.56	0.000
AGE 8							
IBI norm	52	87.615	19th	22.981	4.676		
100 days	10	90.800	27th	24.300	2.263	1.37	0.183
200+ days	33	97.152	42nd	27.242	1.921	5.84	0.000
Current Year Analysis							
AGE 3							
100 days	12	--	--	5.751	2.221	4.60	0.000
200+ days	4	(too few for analysis)					
AGE 4							
100 days	39	--	--	7.103	3.299	4.32	0.000
200+ days	33	--	--	10.394	3.316	9.73	0.000
AGE 5							
100 days	17	94.824	37th	12.235	3.898	3.21	0.002
200+ days	57	101.597	53rd	14.211	3.406	8.43	0.000
AGE 6							
100 days	10	82.400	12th	11.800	5.996	-0.98	0.330
200+ days	27	103.852	58th	18.074	4.178	4.39	0.000

TABLE 8. (continued)

AGE 7							
100 days	5	(too few for analysis)					
200+ days	18	102.833	58th	25.000	1.910	5.01	0.000
AGE 8							
100 days	0						
200+ days	18	97.889	45th	27.556	2.064	5.64	0.000

1.6 READING IN ENGLISH

TABLE 9. WIDE RANGE ACHIEVEMENT TEST SCORES, READING SUBTEST

Cumulative Analysis

CHILDREN WHOSE PRIMARY LANGUAGE IS SPANISH

Age and Attendance	Number	Stand. Score	Nat'l %ile	Mean Raw Score	St. Dev.	t-value	2-tail prob.
AGE 4							
IBI norm	84	--	--	6.786	4.084		
100 days	123	--	--	8.626	3.463	3.49	0.001
200+ days	94	--	--	10.564	3.840	6.36	0.000
AGE 5							
IBI norm	75	79.080	8th	9.200	3.792		
100 days	71	84.225	14th	11.113	4.982	2.60	0.010
200+ days	126	95.437	37th	16.405	7.096	9.37	0.000
AGE 6							
IBI norm	62	80.145	9th	14.258	6.763		
100 days	33	83.667	14th	16.242	7.429	1.32	0.192
200+ days	77	95.221	37th	23.610	10.219	6.46	0.000
AGE 7							
IBI norm	66	79.212	8th	23.439	10.043		
100 days	15	86.867	19th	27.933	15.434	1.08	0.297
200+ days	43	96.767	42nd	38.884	14.394	6.13	0.000
AGE 8							
IBI norm	45	79.822	9th	31.111	11.871		
100 days	6	(too few for analysis)					
200+ days	30	99.400	47th	50.733	10.859	7.25	0.000
CHILDREN WHOSE PRIMARY LANGUAGE IS ENGLISH							
AGE 4							
IBI norm	34	--	--	7.765	4.046		
100 days	32	--	--	9.563	3.141	2.01	0.049
200+ days	34	--	--	11.382	7.765	3.26	0.002
AGE 5							
IBI norm	19	87.316	19th	12.579	6.354		
100 days	24	96.375	39th	16.250	5.795	1.98	0.055
200+ days	49	97.633	42nd	17.571	6.110	2.99	0.004
AGE 6							
IBI norm	8	(too few for analysis)					
100 days	11	92.273	30th	22.455	8.858	(no norm group)	
200+ days	15	102.467	55th	27.467	8.927	(no norm group)	
AGE 7							
IBI norm	11	90.545	27th	35.091	13.389		
100 days	9	(too few for analysis)					
200+ days	8	(too few for analysis)					

TABLE 9. (continued)

Current Year Analysis

PRIMARY LANGUAGE SPANISH							
AGE 4 (200+)	26	--	--	9.539	2.996	3.18	0.002
AGE 5 (200+)	44	92.500	32nd	14.500	5.337	5.79	0.000
AGE 6 (200+)	23	94.304	34th	22.870	9.593	3.96	0.000
AGE 7 (200+)	14	97.643	45th	39.286	14.398	3.92	0.001
AGE 8 (200+)	18	103.278	58th	54.111	10.649	7.14	0.000
PRIMARY LANGUAGE ENGLISH							
AGE 5 (200+)	13	96.231	39th	16.846	6.388	1.86	0.072

Too few for analysis at any other ages.

1.8 CULTURAL CONCEPTS

TABLE 10. SCORES ON BMHS TEST OF CULTURAL CONCEPTS

Cumulative Analysis

Age and Attendance	Number	Mean Raw Score	Standard Deviation	t-value	2-tail Probability
AGE 3					
IBI norm	90	17.367	4.483		
100 days	21	21.381	4.455	3.70	0.000
200+ days	0				
AGE 4					
IBI norm	55	21.200	4.923		
100 days	83	25.639	5.554	4.81	0.000
200+ days	48	26.521	4.649	5.61	0.000
AGE 5					
IBI norm	29	25.793	5.421		
100 days	59	29.407	5.518	2.90	0.005
200+ days	95	32.221	4.659	6.25	0.000
AGE 6 and 7					
IBI norm	17	27.882	7.236		
100 days	52	34.692	4.869	3.62	0.002
200+ days	75	36.200	4.325	4.56	0.000
AGE 8 and 9					
IBI norm	13	32.077	4.924		
100 days	27	37.926	4.506	3.73	0.001
200+ days	18	40.000	2.849	5.21	0.000

1.9 LANGUAGE, MATH AND READING SCORES OF CONTINUITY AND COMPARISON GROUP CHILDREN: SPECIAL STUDY

TABLE 11. SPANISH AND ENGLISH SCORES ON PEABODY PICTURE VOCABULARY TEST FOR CONTINUITY AND COMPARISON GROUP

Grade Level and Test Group	Number	Spanish Raw Score	St. Dev.	t-value	2-tail Probability
KINDERGARTEN					
Comparison	31	40.000	9.839		
IBI Continuity	18	44.667	8.225	1.70	0.097
FIRST GRADE					
Comparison	30	48.667	10.001		
IBI Continuity	22	50.636	7.811	0.77	0.447
SECOND GRADE					
Comparison	50	54.320	10.748		
IBI Continuity	21	56.714	10.932	0.85	0.397
THIRD GRADE					
Comparison	40	56.550	13.651		
IBI Continuity	23	59.261	10.575	0.82	0.415
		English Raw Score			
KINDERGARTEN					
Comparison	31	12.032	7.190		
IBI Continuity	18	22.000	10.770	3.50	0.002
FIRST GRADE					
Comparison	30	20.100	13.827		
IBI Continuity	22	37.000	13.501	4.40	0.000
SECOND GRADE					
Comparison	50	30.020	16.402		
IBI Continuity	21	44.000	15.153	3.35	0.001
THIRD GRADE					
Comparison	40	35.875	15.693		
IBI Continuity	23	56.044	8.177	6.70	0.000

Spanish score from Form B, English Score from Form A of the Peabody Picture Vocabulary Test.

Comparison Group = Children from neighboring south Texas school district whose families move during year for seasonal farm work.

IBI Continuity = Children in IBI mobile component who received educational services in Texas and in one or more northern locations, and who were enrolled for a minimum of 200 days in IBI program.

TABLE 12. WIDE RANGE ACHIEVEMENT TEST SCORES, MATH AND READING SUBTEST, FOR COMPARISON AND CONTINUITY GROUP CHILDREN

SCORES IN MATH

Grade Level and Test Group	Number	Mean Standard Score	Nat'l %ile	Mean Raw Score	St. Dev.	t-value	2-tail prob.
KINDERGARTEN							
Comparison	31	76.645	6th	8.548	4.280	5.67	0.000
IBI Continuity	18	103.500	61st	15.833	4.423		
FIRST GRADE							
Comparison	30	87.933	19th	15.000	3.869		
IBI Continuity	22	110.545	77th	22.955	3.773	7.40	0.000
SECOND GRADE							
Comparison	50	89.280	23rd	21.700	4.652		
IBI Continuity	21	97.714	45th	24.952	3.057	3.47	0.001
THIRD GRADE							
Comparison	40	86.250	18th	24.225	4.117		
IBI Continuity	23	97.870	45th	28.391	1.852	5.50	0.000

SCORES IN READING

Grade Level and Test Group	Number	Mean Standard Score	Nat'l %ile	Mean Raw Score	St. Dev.	t-value	2-tail prob.
KINDERGARTEN							
Comparison	31	75.967	5th	9.581	4.031		
IBI Continuity	18	89.889	25th	15.889	8.130	3.08	0.005
FIRST GRADE							
Comparison	30	77.267	6th	18.267	6.313		
IBI Continuity	22	94.136	34th	27.455	10.308	3.70	0.001
SECOND GRADE							
Comparison	50	78.940	8th	26.160	9.968		
IBI Continuity	21	94.619	37th	40.952	15.114	4.12	0.000
THIRD GRADE							
Comparison	40	77.850	7th	32.300	12.980		
IBI Continuity	23	98.348	45th	52.652	9.782	6.52	0.000

Comparison Group = Children from neighboring Texas school district whose families move during year for seasonal farm work.

IBI Continuity = Children in IBI mobile component who received educational services in Texas and in one or more northern locations, and who were enrolled for a minimum of 200 days in IBI program.

APPENDIX B

TECHNICAL REPORT ON THE BILINGUAL MINI HEAD START TEST OF CULTURAL CONCEPTS

The BMHS Test of Cultural Concepts was developed in 1975-76 to meet the need of a test of knowledge related to culture that was appropriate to children age 3-8. It was the finding of the project that most cultural heritage materials are geared to the older school-age child who has the time perspective to learn about history, famous figures, and rather abstract concepts. Other tests combine knowledge questions with attitude questions requiring the selection of words or faces along a continuum of five or more steps from positive to negative. IBI staff felt the younger children would not be able to respond to this multiple choice answer and that the results would reflect their confusion leading to very poor test reliability.

Content Validity

The project teherefore elected to design its own test. Six aspects of culture were selected by the educational director, in consultation with other staff, which he felt were aspects that would be meaningful to small children.

Food was one aspect chosen. Staff then identified food items which they felt were most typical of Mexico--arroz con pollo, frijoles, enchilada, taco, cabrito, etc., and food most typical of the United States--hamburger, hot dog, cherry pie, doughnuts, turkey, etc.

Clothing was another topic chosen. Staff nominated typical items of clothing from Mexico--poncho, sombrero, huaraches, etc., and from the U. S.--T-shirt, tennis shoes, blue jeans, etc.

The topic representing the highest level of abstraction chosen was that of national symbols--the flags of both countries, and the seal of the U.S. with the eagle with the arrows and the olive branch, and the Mexican eagle with the snake in its talons.

The other topics chosen were holidays and celebrations of each culture (particularly those important to young children), songs and musical games (sung by young children or those used at holidays or celebrations which they would hear); and dances (that could be danced by young children).

Most other tests examined by the project before choosing to write its own left out music and dance, which are commonly considered rather important aspects of a culture. We felt this was probably because music and dance were difficult to portray in a paper and pencil test. The project test made a tape to be played on a cassette (singing by teachers, or music from records used for dancing) with a small sample of each song or dance. Hearing this, the children were then asked to choose between four pictures, the one that "went with" the music.

All test items required a nonverbal response--choosing from four pictures in response to the cue given by the tester. Spanish word cues were used for all items related to Mexican culture, English word cues for all items related to U. S. culture.

Field Testing

Field testing was done of the original test and some pictures changed if the children could not readily recognize the object. In other cases, a pair of pictures was tried out on children and the one most frequently chosen to represent something--e.g., the dance the "Hokey Pokey," was selected for use in the test.

Reliability Data

The final version of the test was given to 70 children in the Texas center during January 1976. The scores from this group of children were analyzed to determine the reliability of the instrument. The Kuder Richardson 20 formula for reliability based on the pattern of answers to each test item, yielded a reliability of .90. For a project made instrument, this level of reliability seemed acceptably high.

Norm Data

The IBI project has developed norm data from a norm group of over 200 children as of 1978. This norm data is reported in this report Technical Appendix, Table 10. The norm group were project children of various ages, who were pretested as they enrolled in the IBI program. Approximately 75% of the children were Spanish dominant, over 95% Mexican or Mexican American, and most come from families doing seasonal or migrant farm work.

Administration Data--Time and Cost

The test contains 44 test items and requires from 5 to 10 minutes to administer. It must be given individually. The test book contains 17 plates of four items each (68 picture choices). The same plate of four pictures may be used for more than one test item, each plate containing one of more dummy choices as well as the pictures related to test questions. Testers must also have the cassette tape for the song and dance questions. The test materials cost approximately $7.00, plus the time of staff in assembling the test books, coloring in some items, and duplicating tapes.